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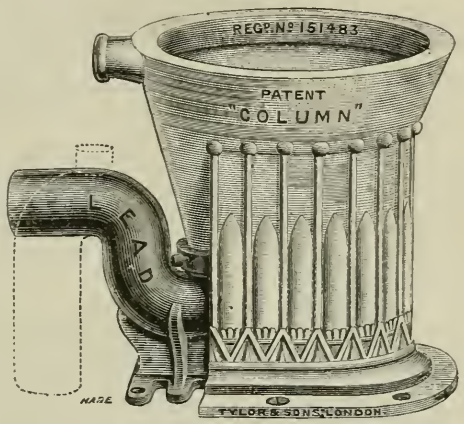

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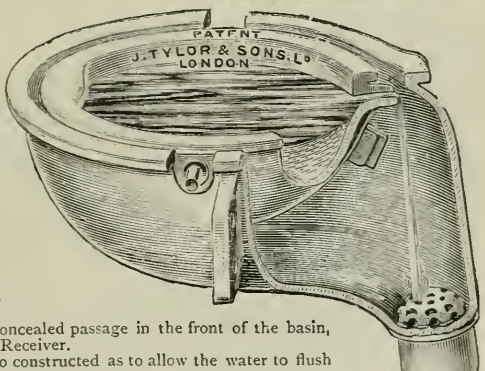

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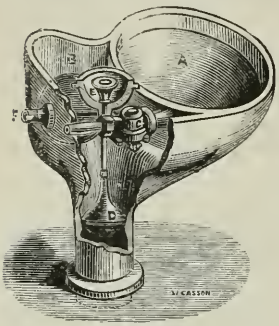

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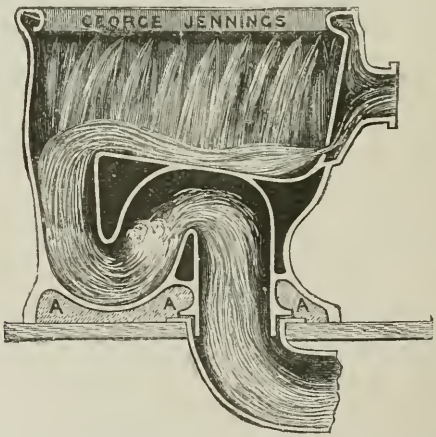

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"Eschew Tea."

Of all the luxuries which modern civilisation has brought to us, there is probably none so much abused by women as tea. We know the habit is not entirely confined to the gentler sex—in fact, we hear that in the Shetland Islands the teapot stands on the hob all day, being constantly replenished as the frequently repeated calls upon its contents require; here women and men are alike to blame, but in more southern climates it is women who are the chief offenders. We freely admit that it is only right that whilst the "lords of creation" have their pipes and—we trust—occasional glasses of wine or ale, their weaker sisters should also take something to soothe or stimulate.

BUT MUST IT BE TEA?

How is it that many women are so nervous, so anæmic, so listless? how is it that constipation and dyspepsia are so prevalent among women as almost to be proverbial? We have heard it ascribed to "original sin," but surely the sin is that of drinking too much tea; for students and other men who indulge in the habit also suffer from the same series of ailments, and if the habit be discontinued the unpleasant symptoms also cease. Is there, then, nothing which can replace tea in the hearts of suffering womankind? Yes, there is a new preparation called *Caffyn's Malto-Carnis, quite as

STIMULATING AS TEA,

quite as refreshing, and at the same time a food. It contains the Juice of Meat in combination with Extract of Malt and Cocoa, and if our readers will go to their druggist, buy a bottle and try it, we are quite sure they will not regret the change. Old habits are not easy to eradicate, but when we know the change will certainly be for our benefit, surely it is worth a little effort. Especially give it to the young who have not already contracted such pernicious ways; it will make them stronger and happier, and thus the benefit to them will in turn be a benefit to ourselves.

* "Caffyn's Malto-Carnis consists of two thirds (66%) of Caffyn's Liquor Carnis, 'uncooked juice of beef,' in combination with Extract of Malt and Cocoa. Dyspeptic persons who have been recommended to eschew tea would do well to give Caffyn's Malto-Carnis a trial, and in other and similar diseased conditions, the preparation will doubtless prove useful."—*The Medical Press.*

NOTE.

Caffyn's Liquor Carnis, Malto-Carnis, and allied Products of Raw-Beef-Juice are prepared from British Beef only—in London—at the Laboratories of The Liquor Carnis Co., in Farringdon Street—Smithfield Works—close to Smithfield Market.

Bath
24 Janvier
1892

PREFACE.

It is not extraordinary that a work which undertakes to afford information on every subject connected with the professional requirements of medical practitioners should find the demands upon its space grow greater year by year. We have never hesitated to enlarge the size of the volumes in order to meet these demands, and the rapidity with which the circulation of the "Annual" has increased has not only rendered this possible, but shows also that we have been able to supply the wants of a considerable proportion of the profession. Our present volume is larger and more fully illustrated than any of its predecessors, and we trust that it will meet with the same favourable reception which they were accorded.

During the ten years the "Annual" has been in existence, fresh studies have rapidly sprung up, having a voluminous literature of their own, and which have rendered the task of the practitioner in keeping abreast of the times more difficult than at any previous period in medical history.

We recognize that a clear idea of such subjects would not always be attained by a series of extracts from the articles contributed during the year; expert knowledge is necessary to appreciate their position correctly, and we have always made it a rule to deal from time to time with the newer branches of study as a whole, asking eminent specialists to help us in placing them lucidly before our readers.

The ready assistance which our own contributors and other eminent members of the profession have always been ready to afford us in doing so is a matter upon which we cannot speak too gratefully.

Bacterial Pathology is a subject which appears likely to assume overwhelming proportions, touching as it does medical and surgical treatment at every point, and it is one which we should have

found it difficult to present satisfactorily unless Dr. Armand Ruffer had come to our aid, and afforded us a survey of the whole subject in a manner which cannot fail to interest our readers.

Spinal Surgery has recently attracted a great deal of attention, and we think that the review and bibliography of the subject which Mr. Thorburn has contributed will show how much advance has been made.

In the department of Skin Diseases we regret very much that Dr. Jamieson is no longer able to continue the series of articles in which he spared no pains to place his great knowledge and experience at the service of the profession; but we are very fortunate in having Dr. Colcott Fox to represent this subject in the present volume.

The Dictionary of New Remedies has been extended by the particular desire of a large number of our readers both in Great Britain and America, and the chemistry of the new synthetic remedies and a dose index of the newer drugs have been added to it.

Diagnosis has not been omitted from the subjects considered, and we think that Mr. Hurry Fenwick's article on Cystoscopy, and Dr. Greville MacDonald's on Rhinoscopy, will prove of practical value.

An article by Mr. Pringle on Photography in Clinical Medicine represents one of the most recent demands made upon us for additional information. The practical hints afforded on matters peculiar to the use of photography for clinical work will, we trust, meet the wants of our readers.

One frequently repeated suggestion, which we have not yet seen our way to meet, is that the "Annual" shall appear in two smaller volumes at intervals of six months. There is much to be said in favour of this proposal; but we should like to hear the views of more of our readers before considering the question with a view to its practical accomplishment.

The "Medical Annual" Offices,
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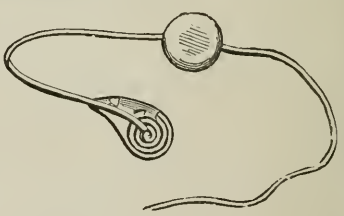

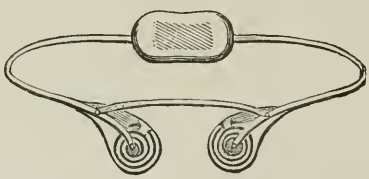

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THE MEDICAL ANNUAL.

PART I.—THERAPEUTICS.

The Dictionary of New Remedies

AND

REVIEW OF THERAPEUTICS FOR THE YEAR 1891.

By PERCY WILDE, M.D.

THE large place which the new synthetic remedies have occupied in therapeutic literature during the past and recent years, has rendered it necessary for the practitioner to interest himself in a branch of organic chemistry which formerly had but slight claims upon his attention. The question would only concern the chemist were it not that these new products are the result of the study of the relationship between chemical structure and physiological action, which opens up the possibility of our being able to construct new drugs that will produce precisely the actions we require to meet any given condition. Without directly endorsing the hopeful views which many of our prominent pharmacologists have been led to form of the influence on this knowledge upon the future of treatment, it is impossible not to recognize the scientific interest of the subject. While we have described, in reference to the individual drugs, the chemical changes of which they are the result, it is difficult to follow the evolution of the new Antipyretics, Antiseptics, Analgesics, and Hypnotics without studying them in some collective and systematic form.

While considering the best means of presenting this information to our readers, we found, in a paper read before the British Pharmaceutical Conference by Mr. John Hodgkin, F.L.S., F.C.S., the whole matter so ably and lucidly discussed that we cannot do better than to give a place to the views of this distinguished chemist, which will enable them to be used for permanent refer-

ence. Mr. Hodgkin divides the synthetic remedies into two great groups :—

I.—THE METHANES AND ALDEHYDES represented by Chloroform, Paraldehyde, Sulphonal, and Chloroform.

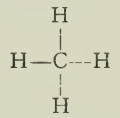
II.—THE AROMATIC SERIES represented by Antifebrin (Acetanilide), Antipyrin, Exalgine, β Naphthol, and Thallin.

The first series contains drugs of the hypnotic and anæsthetic class; the second those which act as antipyretics and antiseptics. There are exceptions, however, to this classification.

The constitution of the various agents is represented by graphic formula.

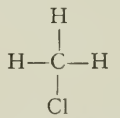
GROUP 1.—ALDEHYDES AND METHANES.

Methane (Marsh Gas) consists of *four* atoms of hydrogen, a monovalent element, united to *one* atom of carbon, a tetravalent element. They are supposed to be united thus :—

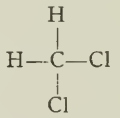


Each of these four atoms of hydrogen is capable of being replaced by other monovalent elements or groups.

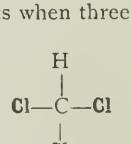
Methyl Chloride (CH_3Cl) is produced by replacing *one* atom of the hydrogen in methane by *one* of Cl (chlorine). Thus :—



Methylene Chloride (CH_2Cl_2) is the result when two atoms of H are replaced by Cl. Thus :—

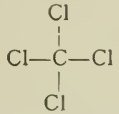


Chloroform ($CHCl_3$) results when three atoms of H are replaced by three of Cl. Thus :—



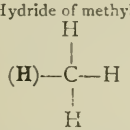
Bromoform, and *Iodoform*, are exactly analogous, bromine and iodine respectively taking the place of the chlorine.

Tetrachloride of Carbon (CCl_4) is the result when all the atoms of H are replaced by Cl. Thus:—

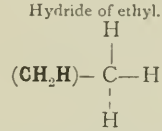


Marsh gas, as well as being considered as methane, CH_4, may be considered as a *Hydride of methyl*, CH_3, the most elementary of alcohol radicles: thus $CH_3{\cdot}H$. If we take the next body in this series, *i.e.*, by adding CH_2 to it we obtain *Hydride of ethyl*, $C_2H_5{\cdot}H$. Thus:—

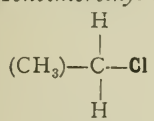
Hydride of methyl.



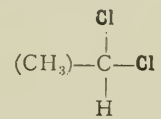
Hydride of ethyl.



If we substitute a chlorine atom for one of the free hydrogens we obtain *Ethyl chloride*, $C_2H_5{\cdot}Cl$, but if two H atoms are replaced we obtain *Monochlorethyl* chloride or *Ethylidene chloride*. Thus:—



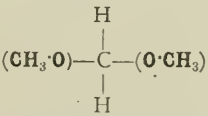
Ethyl chloride.
$C_2H_5{\cdot}Cl$



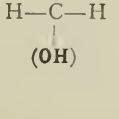
Ethylidene chloride.
$CH_3{\cdot}CH{\cdot}Cl_2$

This latter compound is isomeric with Ethylene chloride $C_2H_4{\cdot}Cl_2$ or Dutch liquid.

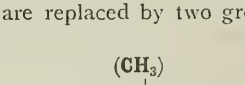
Methylal results when two of the H atoms in marsh gas are replaced by the groups $(O{\cdot}CH_3)$. Thus:—



Methyl alcohol (Carbinol or Wood Spirit). One H in marsh gas is replaced by the group OH, called Hydroxyl. Thus:—

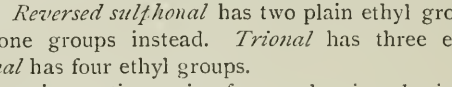


Amylene hydrate (Tertiary Amyl Alcohol) results when the three remaining H atoms are replaced by two groups of CH_3, and one of C_2H_5. Thus :—

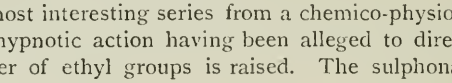


Sulphonal is produced if we add an SO_2 group to the ethyl group, making $C_2H_5{\cdot}SO_2$, and then replace the OH group by a similar $C_2H_5{\cdot}SO_2$ group. This chemically is diethyl-sulphone-dimethyl-methane, $C(CH_3)_2(C_2H_5{\cdot}SO_2)_2$. *Reversed sulfhonal* has two plain ethyl groups and two methyl-sulphone groups instead. *Trional* has three ethyl groups, whilst *Tetronal* has four ethyl groups.

This is a most interesting series from a chemico-physiological point of view, the hypnotic action having been alleged to directly increase as the number of ethyl groups is raised. The sulphonals are thus represented :—



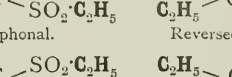
Sulphonal. Reversed Sulphonal.



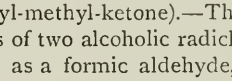
Trional. Tetronal.

CLASS II.

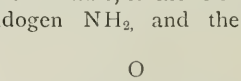
These are on the type of Formic Aldehyde, which is written thus :—



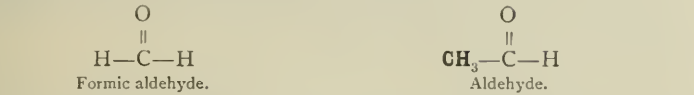
Hypnone (or Phenyl-methyl-ketone).—This is really a ketone (*i.e.*, a body which consists of two alcoholic radicles united by a CO group), but it may be written as a formic aldehyde, in which one atom H is replaced by phenyl C_6H_5, and the other by methyl. Thus :—



Urethane, or *Ethyl carbamate*, is the COH_2 group in which one H is replaced by amidogen NH_2, and the other by an oxyethyl group :—

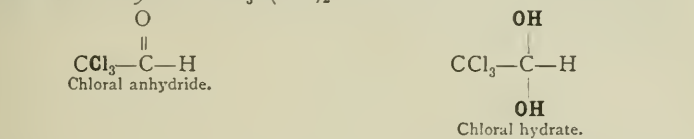


Aldehyde, CH_3COH or C_2H_4O, is the next in the series to formic aldehyde, a CH_3 group replacing the H thus :—

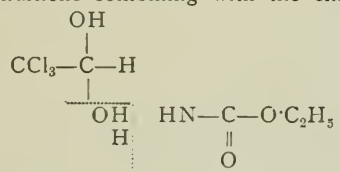


Paraldehyde and *Metaldehyde* are what are known as polymerides of aldehyde, *i.e.* to say, they are of the same percentage composition, but of different vapour densities.

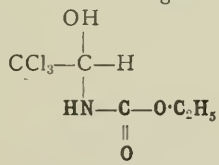
Choral Hydrate.—By replacing the three hydrogens in the methyl CH_3 group by chlorine, we get *Chloral anhydride*, or trichloraldehyde, CCl_3COH, and if this is hydrated, *i.e.*, add one molecule of water, we obtain *Chloral hydrate* $CCl_3C(OH)_2H$. Thus :—



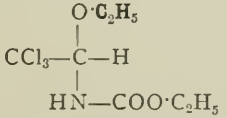
Ural is a compound of chloral hydrate and urethane, the bodies under suitable conditions combining with the elimination of water. Thus :—



The carbon is tacked on to the nitrogen of urethane, forming *Ural*. Thus :—



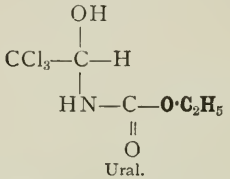
Somnal is another urethane derivative, being Ural in which the hydrogen in the OH group is replaced by ethyl.

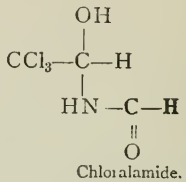


The Germans call it "ethylirtes chloralurethan," or ethylated chloral urethane.

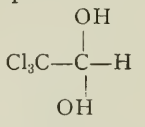
Chloralamide.—Starting again from formic aldehyde COH_2, if we

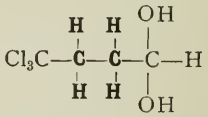
replace one of the H atoms by the group NH_2, amidogen, we obtain *Formamide*, $CO{\cdot}NH_2{\cdot}H$, and if we combine this with chloral anhydride we obtain *Chloralamide*, which is similar to *Ural*, with the exception that the oxy-ethyl is replaced by H. Thus :—


Ural.


Chloralamide.

Butyl chloral (Croton chloral hydrate) is of course analogous to ordinary chloral hydrate, the difference being the addition of two CH_2 groups. Thus :—


Chloral hydrate.

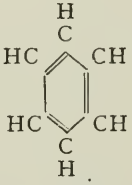

Butyl chloral hydrate.

Bromal hydrate is, of course, exactly analogous to chloral hydrate, bromine atoms replacing the chlorine.

GROUP II.—THE AROMATIC SERIES.

This is divided by the author into two classes : (1,) Benzene C_6H_6 including aniline, benzoic acid, and phenol derivatives ; (2,) Naphthaline $C_{10}H_8$ including naphthylamine, naphthoic acid, naphthol, and quinoline derivatives.

The author represents benzene by Prof. Kekule's graphic formula as follows :—

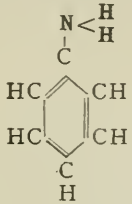


This shows the carbon atoms united to one another by one and two bonds alternately, the hydrogen being united to the carbons by a single bond : the desires of each element are thus completely satisfied. Each of the six hydrogen atoms is capable of replacement by a monovalent group or radicle, and under suitable conditions a carbon can be replaced.

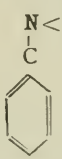
By employing this hexagon, or benzene ring, as it is called, he

explains the structural differences of these synthetic remedies, as element or group is substituted to form fresh compounds.

Amidobenzene (or *aniline*) may be represented thus :—



For convenience and greater distinctness he leaves out the symbols for carbon and hydrogen where they do not differ from the original benzene hexagon, and only fills in those which show the replacements : for example, the abbreviated formula for aniline is as follows :—

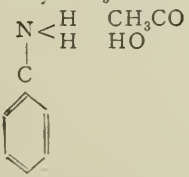


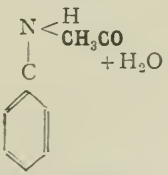
Aniline may be regarded as benzol, C_6H_6, in which one H is replaced by amidogen, NH_2. It may therefore be called Amido-benzene, or Phenylamine, Phenyl being the group C_6H_5 and benzol being theoretically its hydride $C_6H_5{\cdot}H$; or *aniline* may be considered as ammonia NH_3 in which one H is replaced by phenyl, so that aniline may be considered an organic ammonia, and in fact it is, both from its behaviour and its constitution.

Ammonia.

Aniline.

Acetanilid (Antifebrin) is produced when aniline is acted upon under suitable conditions. One hydrogen is then replaced by the monovalent group acetyl CH_3CO. Thus :—

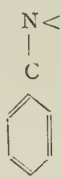




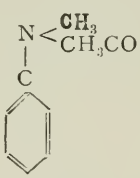
Aniline + Acetic acid = Acetanilid + Water.

$C_6H_5NH_2 + CH_3CO{\cdot}OH = C_6H_5NHCH_3CO + H_2O.$

Benzanilide.—This results when, instead of using Acetic acid, the hydrogen is replaced by Benzoic acid. Thus :—

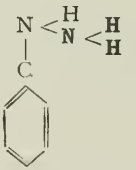


Methylacetanilid (Exalgine) is produced when the residual hydrogen in the NH_2 group is replaced by methyl (CH_3). Thus :—

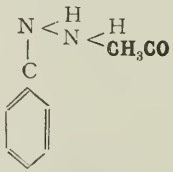


Exalgine = $C_6H_5N{\cdot}CH_3{\cdot}CH_3CO$.

Phenylhydrazin, which has the formula $C_6H_5{\cdot}NH{\cdot}NH_2{\cdot}$, results when, instead of replacing the H in the NH_2 group in aniline by bodies such as acetyl, benzoyl, or methyl, we replace it by a second amidogen group. Thus :—



Pyrodin (Actyl-phenylhydrazin) is produced by replacing one of the hydrogens in the NH_2 group by acetyl. Thus :—

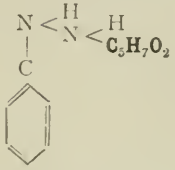


Pyrodin (or Hydracetin).

$C_6H_5{\cdot}NH{\cdot}NH{\cdot}CH_3CO$.

Antithermin is the product of the reaction of levulinic acid upon

phenylhydrazin, so that it may be considered as levulinyl-phenyl-hydrazin. Thus:—



Antithermin.

$C_6H_5{\cdot}NH{\cdot}NH{\cdot}C_5H_7O_2$.

Antipyrin is regarded as derivative of phenylhydrazin. By acting upon this substance with aceto-acetic ether, condensation takes place with elimination of water and alcohol, and a new body, originally called methyl-oxychinizin, but now called phenylmonomethyl pyrazolon, is formed. The equation may be represented thus :—

$$CH_3{\cdot}CO{\cdot}CH_2{\cdot}COO(C_2H_5) + H_2N{\cdot}NH{\cdot}C_6H_5 =$$

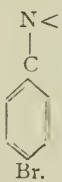
$$CH_3{\cdot}C{-}CH_2{-}CO$$

$$\|\qquad\quad|\qquad\quad + C_2H_5{\cdot}OH + H_2O.$$

$$N\text{ ——— }N{\cdot}C_6H_5$$

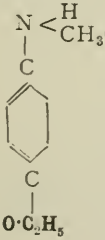
By heating this body with methyl iodide CH_3I and methyl alcohol CH_4O to 100° C. a fresh methyl group is introduced, and we get *Phenyl-dimethyl-pyrazolon*, or *Antipyrin*.

Antisepsin (Para-monobromo-acetanilide).—This is acetanilide, in which the H in the para position is replaced by bromine. Thus:—



$= C_6H_4Br{\cdot}NH{\cdot}CH_3CO.$

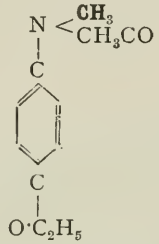
Phenacetin or *Para-acet-Phenetidin.* This is practically acetanilide again, with the exception that the para H is replaced by an oxy-ethyl group. Thus :—



$= C_6H_4{\cdot}(O{\cdot}C_2H_5){\cdot}NH{\cdot}CH_3CO.$

Methacetin is formed by replacing the oxy-ethyl group by an oxy-methyl group.

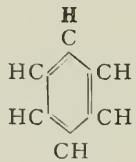
Methyl-phenacetin results when the residual H in the NH_2 group of phenacetin is replaced by CH_3. Thus :—



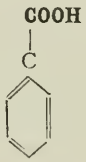
$= C_6H_4 \cdot O \cdot C_2H_5 \cdot N \cdot CH_3 \cdot CH_3CO.$

THE BENZOIC ACID SERIES.

Benzoic acid is benzol, in which one hydrogen is replaced by the group COOH, or carboxyl. Thus :—



Benzol $= C_6H_6$.



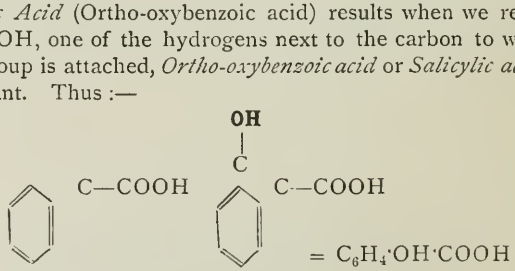
Benzoic acid $= C_6H_5 \cdot COOH$.

This is the simplest of all the benzol series of acids, as formic acid is in the fatty acid series; it may, in fact, be regarded as formic acid in which the H is replaced by phenyl. Thus :—

Formic acid.

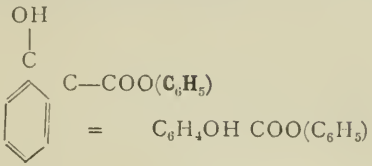
Benzoic acid.

Salicylic Acid (Ortho-oxybenzoic acid) results when we replace by hydroxyl, OH, one of the hydrogens next to the carbon to which the COOH group is attached, *Ortho-oxybenzoic acid* or *Salicylic acid* being the resultant. Thus :—



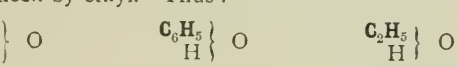
Benzoic acid. Salicylic acid.

Salol (or Phenyl Salicylate) is formed by replacing the H in the COOH group by phenyl C_6H_5. Thus :—



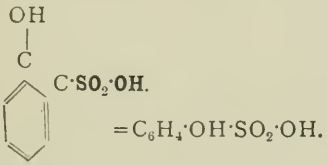
Salol.

Phenol is benzol, in which one H is replaced by hydroxyl, OH, and may be considered as water H_2O in which one H is replaced by phenyl C_6H_5. It is thus analogous to alcohol, which is water in which one H is replaced by ethyl. Thus :—



Water. Phenol. Alcohol.

Aseptol.—This is a 33 per cent. solution of Sozolic acid, or Ortho-phenol-sulphuric acid. When phenol is acted upon by sulphuric acid, the H in the ortho position is replaced by the group SO_3H. Thus :—

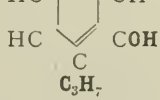


Aseptol or Sozolic Acid.

Toluol (Toluene).—This is a benzol in which one hydrogen is replaced by a methyl group.

Cresol is a phenol of toluene analogous to salol in its structure.

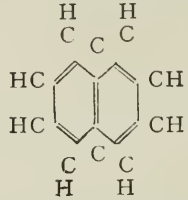
Thymol is a further derivative, having in addition to the CH_3 and OH groups, a propyl group C_3H_7, arranged as follows :—



Aristol is an iodine derivative of thymol.

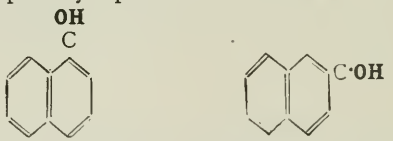
THE NAPHTHALINE SERIES.

Naphthaline $C_{10}H_8$ may be represented by a double hexagon. Thus :—



The transformations by which from Naphthylamine $C_{10}H_7NH_2$ the alpha and beta compounds are formed are rather complicated. The terms Alpha and Beta are applied in reference to the part of the hexagon at which the substitution takes place. When it is at the upper or lower part of the hexagon in the graphic formula the term Alpha is applied ; when it occurs with the molecules written at the side the term Beta is applied.

Naphthol is termed Alpha or Beta naphthol according to this plan, and may be graphically represented as follows. They correspond to phenol.



Alpha-Naphthol = $C_{10}H_7 \cdot OH$ = Beta-Naphthol.

Betol is a salicylate of β Naphthol, the OH group being replaced by $C_6H_4 \cdot OH \cdot COO$.

Quinoline, C_9H_7N, is obtained when a CH in Naphthaline ($C_{10}H_8$) is replaced by a nitrogen atom.

From this the following series are derived :—

M. Kairolin . . .	$C_9H_7(H_3 \cdot CH_3)N \cdot H_2SO_4$.
A. Kairolin . . .	$C_9H_7(H_3 \cdot C_2H_5)N \cdot H_2SO_4$.
M. Kairin . . .	$C_9H_6(OH) \cdot (H_3CH_3)N \cdot HCl$.
A. Kairin . . .	$C_9H_6(OH) \cdot (H_3 \cdot C_2H_5)N \cdot HCl$.
Thallin . . .	$C_9H_6(O \cdot CH_3) \cdot (H_4)N$.
Ethyl-thallin . . .	$C_9H_6(O \cdot CH_3)(H_3 \cdot C_2H_5)N$.
Chinazoline . . .	$C_8H_6N_2$.
Orexine	$C_8H_6(HC_6H_5)N_2$.

For a description of the somewhat complicated reaction which takes place in the process, we must refer to Mr John Hodgkin's original paper.

We append a list of the more recent remedies, showing their dose and solubility, based upon the information given by Mr. H. Hebling, F.C.S., in the "Modern Materia Medica."

Drug.	Dose.	Solubility. Water.	Spirit.	Other menstrua.
Acetanilide	2–5 grs.	1–200	1–10	1–18 boiling water. 1-40 glycerine
Agaricine	$\frac{1}{12}$–$\frac{1}{6}$ gr.	slightly sol.	1–130	
Anisic Acid	15 grs.	slightly sol.	sol.	
Anthrarobin	—	insol.	1–5	aqueous alkalies and glycerine.
Antipyrin	5–30 grs.	1–1	1–1	
Antisepsin	—	insol.	diffic. sol.	
Apyonin	—	slightly sol.	freely sol.	
Aristol	—	insol.	slightly sol.	taken up by fatty oils by trituratio n
Benzanilid	15–45 grs.	insol.	1–60	
Benzosol	4 grs.	insol.	sol.	readily sol. in hot alcohol
Betol	3–8 grs.	insol.	diffic. sol.	in about 3 of boiled alcohol.
Bismuth salicylate	10–15 grs.	insol.	insol.	
Bromacetanilid	2–8 grs.	—	—	v. antisepsin.
Bromoform	1–2 ms.	1–300	freely sol.	
Bromol	1 gr.	prac. insol.	freely sol.	ether, chloroform, glycerine or oils.
Camphoric acid	—	diffic. sol.	readily sol.	hot water.
Chinoline	5–20 grs.	prac. insol.	1–5	
,, salicyl		1–80	freely sol.	
,, tartrate		1–80	1–150	
Chloralamid	30–45 grs.	1–10 (slowly)	1–2	
Chloralammonium	30–45 grs.	—	—	
Chloralcyanhydrate	$\frac{1}{3}$ gr	freely sol.	freely sol.	
Chloralimide	—	insol.	sol.	
Chloralurethan	10–40 grs.	insol.	freely sol.	
Creolin	2–5 ms.	emulsifies	sol.	
Creasote	1–3 ms.	prac. insol.	freely sol.	120 parts of hot water.
Cresalols	—	insol.	readily sol.	oils.
Creasotic acids	—	diffic. sol.	readily sol.	
Dithiosalicylic acid I.	—	insol.	insol.	
,, ,, II.	8 grs.	insol.	readily sol.	
Diuretin	15 grs.	freely sol.	—	

Drug.	Dose.	Solubility. Water.	Spirit.	Other menstrua.
Ethyl bromide	5–10 m.	insol.	sol.	miscible with ether, chloroform, & oils.
Eucalyptol	2–5 m.	insol.	freely sol.	
Eucalyptoresorcin	—	insol.	sol.	ether and chloroform.
Euphorine	6–8 grs.	insol.	readily sol.	taken up by mixture of alcohol and water.
Exalgin	½–4 grs.	diffic. sol.	readily sol.	
Fluorescein	—	sol.	—	
Guaiacol	2 ms.	1–200	readily sol.	
Hydracetin	⅙–1 gr.	1–50	readily sol.	1–8 boiling water.
Hydronaphthol	—	slightly sol.	sol.	
Hydroquinone	6–9 grs.	readily sol.	readily sol.	
Hydroxylamine hydro.	—	1–1	1–15	glycerine.
Hypnal	10–15 grs.	1–15	—	
Hypnone	3–8 ms.	insol.	readily sol.	miscible with fatty oils.
Ichthyol	4–20 ms.	freely sol.	partly sol.	
Iodantipyrin	—	diffic. sol.	diffic. sol.	more freely sol. in hot menstrua.
Iodol	3 grs.	prac. insol.	1–3	precipitated by water, but not by glycerine.
Kairin	—	1–6	1–20	
Lanolin	—	insol.	1–80 (78°C)	mixes with an equal weight of water.
Lithium salicyl	6–10 grs.	1–1	—	
Lysol	—	freely sol.	freely sol.	
Magnesium salicyl	10–20 grs.	1–10	1–10	
Mercury benzoate	⅕–½ gr.	prac. insol.	diffic. sol.	
,, carbolate	⅕–½ gr.	insol.	v. diffic. sol	
,, glycopeptonate		sol.	sol.	
,, imidosuccin.		1–25	1–300	
,, naphtholacet.		insol.	insol.	
,, oxycyanide		sol. (?)	—	
,, salicylate		insol.	insol.	
,, thymolacet.		—	sol.	dilute alkalies
Metaldehyde	—	insol.	readily sol.	
Methacetin	5–15 grs.	1–530	readily sol.	readily sol. in glycerine.
Methylal	15–30 ms.	1–3	readily sol.	miscible with oils.

Drug.	Dose.	Solubility. Water.	Spirit.	Other menstrua.
Methyl chloride	—	—	—	water absorbs 4 and alcohol 35 volumes.
Methylene blue	1½–8 grs.	slightly sol.	readily sol.	
,, chloride	—	slightly sol.	readily sol.	
Myrtol	5 ms.	insol.	readily sol.	
Naphthol	—	1–1000	readily sol.	solubility in water increased by the presence of boric acid.
Naphthaline	1–2 grs.	insol.	diffic. sol.	
Orexin hydrochloride	5–8 grs.	freely sol.	freely sol.	
Oxynaphtoic acid	—	prac. sol.	readily sol.	
Paraldehyde	½–1 drm.	1–10	readily sol.	
Phenacetin	8–12 grs.	prac. insol.	diffic. sol.	
Phenocoll hydrochloride	8–15 grs.	1–16	—	
Piperazine hydro.	5–15 grs.	freely sol.	—	
Pyoctanin blue	—	1–50	—	
Pyridin	—	free. miscible	1–1	
Resopyrin	—	insol.	sol.	
Resorcin	3–8 grs.	1–2	readily sol.	
Saccharin	—	1–400	1–30	
Salipyrin	15 grs.	diffic. sol.	readily sol.	
Salol	15–30 grs.	insol.	1–10	alcoholic solutions form emulsions with water.
Sodium anisate	15 grs.	readily sol.	—	
,, dithiosalicyl.	—	1–1	—	
,, paracresot.	15–30 grs.	—	—	sol. in about 24 parts of warm water.
Sozoiodol	—	readily sol.	readily sol.	
,, mercury	—	1–500	—	sod. chlor. solution.
,, potass.	—	1–50	—	
,, sodium	—	1–14	—	
,, zinc	—	1–20	soluble	
Sulphonal	10–30 grs.	1–450	1–65	
Terpin hydrate	3–10 grs.	1–250	1–10	taken up by oil of turpentine.
Terpinol	2 ms.	prac. insol.	readily sol.	
Tetronal	15–30 grs.	1–450	readily sol.	
Thalline sulphate	—	1–7	1–100	2–1 of boiling water.
,, tartrate	2–5 grs.	1–10	slightly sol.	
Thiol (liquid)	4–20 ms.	sol.	sol.	
Thioresorcin	—	—	diffic. sol.	
Trional	15–30 grs.	1–320	readily sol.	
Urethane	15–40 grs.	1–1	1–0·6	

ALOIN.

It would appear from some experiments made by Prof. Meyer that aloin, when given to a man on ordinary mixed diet, either alone or with an alkali, had very little purgative effect; but in man fed on an exclusively animal diet it was much more active. The reason probably is that in the latter case the putrefactive processes in the intestine are much more marked, and the aloin is decomposed into a more active substance. The experiments seem to point to the conclusion that aloin itself is not an active purgative, but that it becomes gradually decomposed in the intestine into a more active body, and hence the slowness of its action.

REFERENCES.—"Archiv. f. Exp. Path.," xxviii, Heft. 3 & 4, 1891; "Therap. Gaz.," June 15, 1891.

APOMORPHINE.

Dr. William Murrell[1] has extensively employed this drug as an **Expectorant** in chronic bronchitis. Contrary to the general opinion that minute doses (¼ of a grain) will act as an emetic, Dr. Murrell found that the majority of his patients could take 1 grain three times a day without inconvenience. His patients were mostly suffering from **"Winter Cough."** Their ages varied from five months to seventy-six years. In order to test the reliability of the drug he employed, he gave a hypodermic injection of 5 minims of a 2 per cent. solution of the same preparation which he had been employing to a youth aged sixteen, with the result that violent vomiting was produced in thirty-five seconds, and continued at intervals for four or five hours. The same patient subsequently was given $\frac{4}{5}$ of a grain by the mouth three times a day without the slighest inconvenience. This clearly shows that much larger doses will be tolerated by the mouth than when given hypodermically. Dr. Murrell found that doses of 1 grain given internally exercised a powerful expectorant action, and proved of value to the patients to whom it was given.

However, a certain amount of nausea appears to have been caused in several of the cases recorded. The author subsequently made use of an ointment containing 1 grain of apomorphine to an ounce of lard, and directed the patient to rub in half the quantity on two consecutive nights; it acted as an expectorant, the effect lasting for several hours, and induced no nausea. In the same paper Dr. Murrell relates some experiments with apocodeine. He found that it acted as a powerful expectorant, and that 3 to 4 grains could be administered *daily* with perfect safety, but his observations on this salt are not yet complete.

Dr. W. J. Ransom[2] records a case in which $\frac{1}{12}$ of a grain of apomorphine produced free vomiting and perspiration in a patient who had

been poisoned by an overdose of the fluid extract of nux vomica. The writer considers that it did not act merely as an emetic, but that its relaxing effect directly antidoted the convulsive action of nux vomica.

REFERENCES.—[1] "Brit. Med. Jour.," Feb. 28, 1891; [2] "New York Med. Record," Jan. 17, 1891.

ARISTOL.

This substance, which we described in our last issue, possessing as it does many of the properties of iodoform without its powerful odour, does not appear to have come into such extensive use as might have been expected. It will be remembered that it is the precipitate formed when an aqueous solution of iodine and potassium iodide is treated with thymol in caustic soda solution. M.M. Quinquand and Fournioux have injected an oily solution of aristol into guinea pigs and dogs in doses equivalent to the four-hundredth part of the animal's weight without producing toxic symptoms. It is partly eliminated by the urine in the form of an alkaline iodide and probably of thymol, this elimination requiring four or five days. No local inflammation was ever observed to result from the punctures. Like many other observers, they have obtained excellent results by dusting the surface of **Varicose** and other **Ulcers** and soft **Chancres** with aristol. In a case of epithelioma even there was a temporary improvement. In eczema no good effects were obtained, and in psoriasis the benefit was less than when oil of cade or pyrogallic acid was employed. In no case was any irritation or inflammation produced, and the absence of the disagreeable and powerful odour of iodoform rendered aristol dressings much more pleasant both for the surgeon and the patient.

Dr. Weissblum does not report favourably of aristol as a local application for psoriasis. His results were more satisfactory in some cases of **Eczema,** but in favus, alopecia areata, and gummatous ulcer, the results were entirely negative.

REFERENCE.—"Central. für. die Ges. Ther.," May, 1891.

ARSENIC.

In a paper on the pharmacology and therapeutics of arsenic Dr. John Aulde[1] lays down the rule that "the smallest doses given at short intervals, under proper restrictions, will prove most efficient, while it removes entirely the element of danger."

For diseases of the alimentary tract, **Gastralgia, Heartburn, Vomiting** of food, both from gastric trouble, pregnancy, or alcoholism, he recommends $\frac{1}{10}$ of a drop of Fowler's solution every ten minutes for an hour, and $\frac{1}{2}$ a drop or less every hour.

For the vomiting of pregnancy he gives the following pill :—

℞ Acidi Arseniosi, Ext. Ignatiæ āā gr. ss | Pulv. Ipecac., Ext. Cascaræ Sagradæ āā gr. xv, Ol. Gaultheriæ gtt. ij

M. et ft. pil. No. xx. Sig.—1 pill after meals, the patient being advised to take a dry diet, with liquids principally between meals.

For **Cancer** and **Ulcer of the Stomach** he combines an antiseptic, thus :—

℞ Acidi Arseniosi gr. ss | Beta Naphthol gr. xij

M. et ft. pil. No. xxiv. Sig.—Take 1 pill every four hours.

For **Constipation,** with marked dryness of the stools, which so commonly accompanies the so-called **Irritative Dyspepsia,** he gives :—

℞ Liq. Potassii Arsenitis gtt. xxxvj, Syr. Pruni Virg. f ℥ ij | Infus. Gentianæ q.s. ad f ℥ iij

M. Sig.—Take 1 teaspoonful after meals.

For the constipation due to the presence of undigested food in the small intestine, he gives arsenic in combination with pepsine to be taken an hour after meals, and combines it with pancreatine when there is fermentation in the intestines, and distension due to the presence of undigested starchy or fatty foods.

Speaking of the striking similarity between arsenical poisoning and **Asiatic Cholera,** he says : "So closely do they resemble each other, not only symptomatically, but in morbid anatomy, that the theoretical value of arsenic in this disease has been strongly advocated. It appears, however, from a clinical standpoint, that, by using it in conjunction with copper, in the form of cupric arsenite, we have a remedy which more nearly covers the ground." (See also "Copper Arsenite of.")

He also recommends the use of arsenic for **Peptic Albuminuria,** and reminds us that since 1883 the bromide of arsenic has been used extensively for diabetes ; he considers, however, that it is only suitable for the milder cases. The following is M. Vigier's formula for diabetic patients :—

℞ Lithii Carbonat. gr. xxx, Sodii Arseniat. gr. j | Ext. Gentianæ gr. xv

M. et div. in caps. No. xx. Sig.—Take 1 capsule morning and evening.

In chronic **Bronchitis,** when the expectoration is copious and viscid, he uses the following in the form of a tabloid :—

℞ Acidi Arseniosi gr. $\frac{1}{100}$ | Calcii Sulphidi gr. $\frac{1}{10}$

M. Sig.—1 every two hours.

The author also mentions the value of this drug in **Phthisis** and

Tuberculosis, Intermittent Fevers, Neuralgia, Epilepsy, Anæmia, and **Heart Disease.** Speaking of **Rheumatism** and so-called rheumatic gout, he says that "although the therapeutical indications are not well understood, there is no doubt of the value of arsenic in certain cases, especially those marked by a debilitated condition of the system. It is also recommended in **Arthritis,** but, when nodosities have not appeared, rhus toxicodendron will prove superior to arsenic for temporary relief."

After speaking of the various uses of arsenic in skin diseases, he gives the following formula as a means of destroying the sensitive nerve pulp in teeth :—

℞ Acidi Arseniosi gr. v | Morphinæ Acetat. } Creasoti } āā gr. x

M. Sig.—For topical use.

We need hardly remind the reader of the *great caution* necessary in the employment of the above.

The hypodermic use of Arsenic.—Dr. Aulde recommends for this purpose the arseniate of sodium, $\frac{1}{10}$th of a grain daily. Dr. Harold N. Moyer,[2] in a paper on the hypodermic use of arsenic, mentions that Prof. Hammond, of Rush Medical College, has used 35 drops of Fowler's solution as an initial dose. Frühwald, Grunnach, and Dumont, have used Fowler's solution hypodermically in doses of 5 to 20 drops. It was common to find abscesses and cutaneous inflammation at the site of injection.

Dr. W. S. Haynes recommends that the pure anhydrous salt be used ; as ordinarily found in the shops, it may contain from four to twelve molecules of water of crystallization. If this be driven off, by heating to 300°, the resulting salt has a definite composition, with the formula Na_2HAsO_4. A 1 to 100 solution of this salt contains 53 per cent. of the arsenic found in Fowler's solution, so, approximately, the dose of such solution should be about twice that of the liquor potassii arsenitis.

The results with the use of this solution were excellent. In one hundred and twenty-seven injections, with a dose varying from 6 minims of a 1 per cent. solution to 15 minims of a 5 per cent., slight induration was produced six times.

In concluding his article, he says that the action of arsenic "given under the skin, if it have any virtue, must certainly be greater than when taken by the stomach. Thrown into the cellular tissue in the form of a feebly alkaline and readily soluble salt, it is at once absorbed by the blood and carried to all the tissues. Administered in this way, it at once reaches the skin and nervous tissue without running the

gauntlet of the liver. As might be inferred, its action in these cases would resemble that of the salts of mercury when given by inunction or hypodermically. The liver seems to have a strong selective action for certain metallic salts, and among these arsenic must be accorded the first rank. As its toxic effects are largely focussed upon the liver and adjacent abdominal organs, it is rational to suppose that, if given by the mouth, it would pass the liver with difficulty, and cause greater disturbance than if it were immediately distributed to all parts of the body by the general circulation."

Förster[3] describes the case of a little boy, suffering from Graves' disease, who developed bronzing of the skin after a long course of arsenic. The whole neck showed a brownish coloration extending to the upper part of the chest; and immediately under the nipples began a darker pigmentation which appeared deep-brown on the abdomen, while the back was somewhat lighter. The buttocks and the upper parts of the thighs were likewise dark-brown, but got paler farther down. The two sides were equally affected. Arsenic had been administered without interruption for a period of nearly eight months. Wyss recently published two cases of brown pigmentation after a long course of arsenic for chorea, under the name of melanosis. In one, a boy twelve years of age, the colouring was visible after six weeks' use of Fowler's solution (3 drops increased to 15 daily), and in the following weeks it became quite marked. It disappeared, only to recur on the resumption of the drug. In a second boy, two years younger, pigmentation was observed after the same dosage in five to six weeks.

In concluding a recent lecture on arsenic as a drug, Mr. Jonathan Hutchinson[4] expressed the opinion that whilst we may hold that our clinical knowledge respecting this powerful and most important drug has much advanced during the last quarter of a century, we cannot claim to have made any discovery as to its mode of action. We know for certain that it will cure **Psoriasis, Pemphigus,** and their allies, and that it will prevent the recurrence of recurrent **Herpes,** and many other relapsing maladies. How those effects are brought about, however, we cannot even guess. We know also that it may, whilst curing some diseases, produce others, and that herpes zoster is one amongst several different type-forms of peripheral neuritis which may result directly from it. That it has some peculiar affinity for nerve tissue, and some peculiar influence upon nerve function, we may safely believe, but further than this we can scarcely go. As regards its general employment as a remedy for skin diseases, whilst recent observations have strengthened our faith in certain directions, they

have limited it in others, and they have impressed upon us the great need of caution.

REFERENCES.—[1] "New York Med. Jour.," April 4, 1891 ; [2] "Therap. Gaz.," Jan. 15, 1891 ; [3] "Berlin Klin. Woch.," No. 50, 1890 ; [4] "Brit. Med. Jour.," June, 1891.

ASPARAGUS.

A correspondent to the "Lancet"[1] describes the symptoms following a rather hearty indulgence in asparagus. He says : "The result was not only the characteristic odour of the urine, but also an increased frequency of desire for micturition, though the actual amount of excretion was considerably diminished. The attack on each occasion woke me up in the early hours of the morning with deep cutting pains in the perineum and in the glans penis, while the desire for micturition forced me to rise from bed every few minutes for about an hour ; after that I fell asleep and was no more troubled. It seemed to me as if the urine were highly concentrated, and hence irritating ; while the peculiarly unpleasant cutting pain suggested the passage of gravel, or of some kind of crystals."

Culpeper speaking of the wild asparagus says : "It doth provoke urine being stopped, and is good against the strangury, or difficulty of making water ; it expelleth the gravel and stone out of the kidneys, and helpeth pains in the reins."

The active principle asparagin has been found in a number of plants, and is said to exercise a sedative effect upon the heart and circulation. M. Gendrin does not consider that it influences the heart, but he always found it produce a distinct diuretic effect.

The peculiar odour of the urine that follows the use of asparagus has recently been studied by Professor Nencki[2], of Berne, and his experiments tend to show that it is probably a methyl-mercaptan.

Previous experiments by Professor Nencki and M. Sicker have shown that this substance is one of the products of fermentation of albumen, and also of gelatin, and that it forms one of the constituent gases of the large intestine. Indol and phenol are also derived from the putrefaction of albumen, and it is probable that the other sulphur-holding bodies are similarly derived. As to its connection with asparagus, Professor Nencki quotes an interesting communication from Dr. O. Loew, of Munich, to the effect that asparagin contains an organic sulphur compound, and that it is highly probable that methyl-mercaptan is formed in the albuminous disintegration which takes place in the germination of the plant.

REFERENCES.—[1] "Lancet," June 15, 1891. [2] "Arch. f. Exp. Path. u. Pharm.," Bd. xxviii, Heft. 3 u. 4.

BENZO-PHENOID.

This is an abbreviation of the name of a new bactericide discovered by M. M. Galezowski and Petit. It is formed by the decomposition of an aniline dye, the result being a definite compound (tetramethyl-diamido-benzo-phenoid). It is soluble in a hundred parts of water; "the solution further diluted a hundred-fold is neither caustic nor irritant." It has been used for **Ulcers of the Cornea** and **Purulent Keratitis.**

BISMUTH (Gallate of).

Drs. Heintz and Liebreich have recommended this substance as a substitute for iodoform as a local application. They have used it as an application to various raw surfaces, and claim that it favours granulation and diminishes pus secretion. They propose to give it the name of "Dermatol," the reason for which is not quite clear, unless they intend to employ it as a proprietary medicine.

REFERENCE.—"Gaz. Méd. de Paris," June 20, 1891.

BONDUCIN.

This is a bitter resinous principle extracted by alcohol from the oily fruit of Guilandina Bonducella and of Cæsalpinia Bonduc, known as the sugar pea of Guiana. It has been used in **Intermittent Fever,** the dose being 1½ to 3 grains.

REFERENCE.—"Jour. de Méd. de Paris," Oct. 12, 1890.

BROMOL.

Bromol, which was introduced into therapeutics by Dr. Rademaker, is a chemical compound, tribromophenol, and is obtained as a white flocculent and gradually crystallizing sediment when bromine water is added to an aqueous solution of carbolic acid. Pure tribromophenol occurs as a white crystalline substance which melts at a temperature of 203° F., and is nearly insoluble in water, but readily so in alcohol, ether, chloroform, glycerine, and in fatty and ethereal oils; the odour is disagreeable, like that of bromine; the taste is sweet and astringent. According to some experiments previously published by Grimm, the antiseptic virtues of bromol would seem to rival those of carbolic acid. When it is applied to recent wounds it causes a sensation of burning, and has a caustic action; it stimulates atonic granulations, and produces a favourable effect on tuberculous processes. In gangrene it acts as a powerful disinfectant, and accelerates the separation of dead matter. Dr. Grimm applied it to wounds either in a pure state or mixed with some indifferent powder, and as an ointment. He also employed it to impregnate bandages. He considered it inapplicable to the mucous membrane of the mouth, nose, and

pharynx on account of its caustic properties. Dr. Rademaker uses bromol either in substance or in solution of olive oil of the strength of 1 in 30, or as an ointment of the strength of 1 in 10. In diphtheria he brushes the membrane with a glycerine solution of the strength of 1 in 25. As tribromophenol remains undissolved by the gastric juice, and is only slowly acted upon during its passage through the intestinal canal, Dr. Grimm made use of it as a disinfectant of the bowel, giving it in doses of from 3 to 7½ grains per diem. Dr. Rademaker also has administered it in cholera infantum in doses of from 5 to 15 milligrammes, and has prescribed it in typhoid fever. It is secreted by the kidneys in the form of tribromophenol-sulphonic acid.

REFERENCE.—"Lancet," Oct. 10, 1891.

CACTUS GRANDIFLORUS (Night-Blooming Cereus).

Although many new "cardiac tonics" have been introduced during recent years, and a great deal has been written as to their relative virtues, we are as yet without those clinical indications which would enable us to apply each to that particular form of heart derangement for which it may be pre-eminently suitable. It is such indications that the practitioner needs at the bed-side, and it is by differentiation between the characteristic effects of similarly acting drugs that a practical science of therapeutics can be established.

The paper on Cactus read by Dr. Watson Williams at a recent meeting of the British Medical Association, contains precisely the information which we are anxious to obtain before trying a new remedy, and if the indications he gives are confirmed by subsequent experience a very valuable addition will have been made to our therapeutic resources. The author, after describing the botanical features of the plant, alludes to the recent experiments of Dr. Myers, of Rochester, on the physiological action of cactina. When administered to dogs in toxic doses, a primary rise in arterial pressure and pulse rate is observed, followed by a secondary diminution in both. The cardiac pulsations become arhythmical, and the heart finally becomes arrested in systole. An injection of 2 centigrammes of the drug, subsequent to section of the vagi, was followed by an increase in the arterial pressure and pulse rate, and a strong faradic current applied to the cut end of the vagus then failed to arrest the heart's action. In another experiment an intravenous injection of cactina maintained a decided rise in arterial pressure, although both the vagi and sympathetic nerves were divided. From these observations Dr. Watson Williams thinks it is fair to conclude that the effects on the pulse result from the direct stimulation of the intra-cardiac ganglion. But that the rise in blood pressure was also due in part to stimulation of

the medullary vaso-motor centres, was proved by the sudden diminution of the increase in blood-pressure in a dog under the influence of cactina, on section of the spinal cord high up. It was also found to have a generally stimulating action on the spinal motor nerves.

The author considers that these results serve to uphold the clinical results he obtained, and he gives us indications for its employment founded on its use in upwards of two hundred cases. He says: "It is especially in **Functional Disorders of the Heart** that cactus will be found useful; in fact, in these cases, I now but rarely prescribe any other cardiac remedy. In the distressing palpitation in certain forms of dyspepsia, and due to reflex irritation, it hardly ever fails to quickly relieve. In cases of functional palpitation, the attacks generally come when the *patient is resting, and pass off during considerable exertion;* they are often most frequent and most distressing when the patient is at rest in bed. The best results I have obtained by small doses; ½ to 1 minim, every quarter of an hour during the attacks, and 2 or 3 minims of the tincture of cactus in a simple bismuth mixture three times daily."

Palpitation in Anæmia does not appear to be so much benefited by cactus alone, though some of these cases are relieved to a certain extent.

Where **Menorrhagia,** or **Metrorrhagia,** or **Dysmenorrhœa** is accompanied by palpitation, cactus may be advantageously combined with the other appropriate remedies.

In several cases of **Graves' Disease,** he has succeeded in greatly relieving the palpitation and nervousness; and especially in the case of a female patient, aged sixty-three, treated at the Bristol Royal Infirmary, who complained chiefly of attacks of palpitation and an indescribable sense of fear accompanying them. For five weeks she had had attacks coming on every night, about 1 a.m., which prevented her lying down and kept her awake the rest of the night, in addition to attacks during the day. She had a soft mitral bruit at the apex. Pulse 168, regular. Von Graefe's symptom was also present, but proptosis was only slight. He gave her 5 minims of his tincture every four hours. She had a very good night, without any attack of palpitation, nor had she any attack for a whole week. In twenty-four hours the pulse was reduced from 168 to 94 per minute.

"Dr. Percy Wilde, who has used the remedy for many years, finds the greatest benefit in those cases where there is *over-action of the heart with throbbing in the carotids.*"

The "**Tobacco Heart,**" the palpitation of **Hearts Hypertrophied** *from prolonged and excessive exercise,* are excellent cases for this remedy.

Aulde, of Philadelphia, says : "We are often confronted with patients who suffer from exhaustion, with irregular or intermittent pulse, due to the abuse of tobacco, and here, instead of unpalatable remedies, like nux vomica, we have cactus, which is rather agreeable than otherwise to most persons, and the effect upon the system and the circulatory apparatus is quickly apparent. The same treatment is indicated for the relief of a similar condition which often affects those accustomed to the inordinate use of tea. The active principle, theine, it has been found, will cause the heart to intermit, but in cactus we have a drug which meets this emergency."

Pitzer claims that in **Sexual Exhaustion** nothing gives such speedy relief as cactus, for it strengthens the cardiac plexus of the sympathetic and improves cardiac nutrition. Dr. Watson Williams can fully confirm this experience, and the action of cactus on the motor nerve centres of the spine, as well as on the heart, explains its satisfactory employment in such cases. In fact, all these cases of palpitation and rapid heart action being relieved by a drug like cactus, which Myers found increased the pulse rate in toxic doses, are explained when we remember they are the result of exhaustion, and, therefore, hyper-excitability of the accelerator nerves of the heart. A small dose of cactus has a tonic action on the exhausted cardiac innervation, and thus the rapid and often intermittent or irregular pulse becomes lessened in frequency, But an abnormally slow and feeble pulse may be quickened and strengthened by this same drug stimulating the cardiac ganglia and muscle, and, if it be pushed, may even give rise to a very rapid pulse, the same drug having apparently opposite effects in varying conditions.

Myers considers that a special indication for its use is during the **Critical Periods of Adynamic Fevers,** as it combines the elements of a heart and spinal tonic motor stimulant ; in this he confirms the experience of Engstad.

In **Organic Diseases of the Heart,** cactus, if less generally applicable, is none the less valuable in its restricted sphere, for it seems to be of greatest service just where digitalis, strophanthus, and other cardiac tonics of that class, fail. Cactus is indicated in **Hypertrophied Hearts,** when the hypertrophy just ceases to be compensatory, and more especially in aortic regurgitation. In cases of uncomplicated aortic regurgitation the author avoids digitalis because it prolongs the diastolic period, and thus tends to increase the dilatation of the left ventricle, and also raises an already increased arterial tension. While cactus strengthens the ventricular systole it also tends to shorten the diastole, and thus it succours the heart in two ways, and this without having

such a marked action on the vaso-motor centres as digitalis. Many cases of **Angina Pectoris** are the result of partial failure of the heart. Here cactus will often relieve the anginal pains by giving the heart the necessary fillip for it to maintain the arterial tension without becoming exhausted, and tends to prevent their recurrence by giving tone to the vaso-motor centres. In the graver cases of angina this is not sufficient, and the administration of trinitrin, etc., becomes necessary. A patient with a double aortic bruit and enormous hypertrophy who has been under the author's care at the Bristol Royal Infirmary for eighteen months, complained of typical anginal pains accompanied by the most distressing palpitation and throbbing of the carotids. For about a year these were always most rapidly relieved by small doses of cactus. More recently the regular administration of cactus has simply lessened the intensity and frequency of the attacks and relieved the palpitation ; but when the anginal spasms occur he is obliged to resort to his trinitrin draughts. Engstad states that in angina pectoris, cactus is almost a specific : "I have never been disappointed in its results, I may, probably, in the future, meet with cases that will not be amenable to treatment, but thus far angina pectoris has been easy to relieve by the use of the remedy." In the so-called **Pseudo-Angina**, and in the milder forms of the true angina, it may almost be styled a specific, but it cannot entirely make up for the short-comings of a relatively or absolutely very incompetent heart, and it is fortunate that we have not to rely on cactus alone in angina.

In **Mitral Regurgitation** and dilated thin-walled hearts, Dr. Williams has not found cactus of so much use. Here digitalis and its congeners reign supreme. A certain amount of improvement follows the administration of cactus in most cases ; the pulse improves in force and rhythm, the urine is increased where it has been deficient, and dropsy may be made to disappear, but compared with digitalis or even strophanthus it is decidedly less efficacious.

In most cases of **Mitral Obstruction** with regurgitation, he has found cactus of little or no service.

In simple mitral obstruction, palpitation and shortness of breath are sometimes much relieved, but its property of shortening the diastole obviously tends to contraindicate its employment in mitral obstruction, since it shortens the time for the auricle to empty itself.

Harvey and Bird recommend cactus in **Subacute** and **Chronic Rheumatism,** especially when the joints are much affected, and for preventing cardiac complications, or improving the condition of the heart when it has been affected. They claim that it gives relief from pain in acute rheumatism, and in the chronic forms of muscular rheuma-

tism, especially when given in combination with a purgative. They recommend 8 or 10 drops, three times daily. Dr. Williams has had no personal experience of cactus in rheumatism, and has not observed any special results in cardiac lesions following rheumatism.

The author, in concluding his article, says: "I would point out that the attempt that is being made, particularly in the United States, to substitute cactus for digitalis, will certainly lead to disappointment. But in its proper sphere it will certainly prove one of our most reliable drugs. I have endeavoured to indicate the conditions which call for the administration of cactus, and for the most part it will be found that they are just the conditions in which we desire to avoid the digitalis class of cardiac remedies, or in which we have hitherto had recourse to them for want of a more suitable substitute. Cactus has been compared to aconite; I think, however, that digitalis, cactus and aconite may each be regarded as a type of three distinct classes of cardiac remedies, digitalis stimulating the vagus nerve endings and cardiac muscle, prolonging the diastole; cactus acting chiefly on the accelerator nerves of the heart and sympathetic ganglia, shortening the diastole, and stimulating the spinal motor nerve centres; while aconite is a direct and powerful depressant of the heart, rapidly paralyzing the cardiac muscle, and, unlike the two former drugs, lowering arterial tension by depressing the vaso-motor centre, and also depressing the motor centres of the spinal cord." Dose—tinct. 1 to 5 minims.

REFERENCE.—"Practitioner," October, 1891.

CALAMUS AROMATICUS.

An essential oil obtained from the above is used for flavouring cordials and bitters. Drs. Cadeac and Meunier conclude as a result of their experiments upon animals that the essential oil in large doses has powerful epileptic and tetanic properties. In smaller doses it is only a stimulant, increasing strength without causing ebriety. It always impairs the affectionate disposition of animals, and renders them unruly and stubborn, and it has a special affinity for the nervous system; hence it forms an excellent nervine, but may become dangerous in cordials containing excessive quantities.

REFERENCE.—"Therap. Gaz.," Nov. 15, 1890.

CAMPHOR (Carbolate of).

This is prepared by adding 1 part by weight of carbolic acid to 3 parts of camphor, setting it aside for twenty-four hours, and straining through gauze. It is a permanent liquid, having a specific gravity of 990.

Dr. Cochran, of Iowa City, claims that it possesses unsurpassed germicidal powers, and it is of course powerfully **Antiseptic.**

The author states that when a few drops are injected under the skin, it produces complete **Anæsthesia** in the immediate parts, which lasts for several hours. Some soreness of the surrounding parts follows, but no abscess. A sharp smarting is felt at first, which only lasts a moment. A little ether or alcohol (pure) should be added to it for hypodermic use, so that it will readily flow through the needle. It combines readily with alcohol, ether, fixed and essential oils, and petroleum derivatives, but *not* with aqueous solutions or glycerine.

It readily dissolves menthol, cocaine, salicylic acid, iodoform, chloral hydrate, and mercuric chloride.

When given internally in capsules, in doses of from 5 to 10 drops, it produces a sensation of warmth of the stomach not disagreeable, and giving rise to camphoric eructations, which continue for from one to three hours. When applied to inflamed or ulcerated mucous surfaces, such as the tonsils, pharynx, or cervix uteri, it causes smarting for a moment, and then relieves existing pain, and acts as an antiseptic stimulant.

A similar preparation was employed by Dr. Th. Schaefer in 1885, as a local anæsthetic in **Odontalgia**, introducing it, on cotton, into the cavity of a carious tooth ; also as an anæsthetic in ingrowing toe-nail. He also used it in certain cutaneous eruptions, due to cryptogamic causes.

Dr. R. S. Smith reports two cases in which he used it, first, as a subcutaneous, and then as an intrapulmonary injection in **Phthisis.** He injected from 10 to 20 minims of the carbolate of camphor into the apices of the lungs, repeating it at first every two or three days, and afterwards daily.

He first used subcutaneous injections, but the patients preferred to have them injected into the lung-tissue, as it was less painful. About fifty injections were used in the course of ten weeks in the first case. In the second, the whole quantity injected in twenty-five days was 245 minims, 60 minims having been diffused in the diseased tissue of the right lung. A slight rise of temperature was observed after the injections in one or two instances, but no other evidence of irritation was noticed. Both cases improved greatly under treatment.

REFERENCE.—"Therap. Gaz.," Feb. 16, 1891.

CAMPHORIC ACID.

This is produced when camphor has been boiled for same time with nitric acid. Its formula is $C_{10}H_{16}O_4$.

M. Leu[1] has recently employed this drug internally to control the profuse **Sweats of Phthisical Patients.** It was usually given at bed-time, in doses of 30 grains ; sometimes that dose was given in the

afternoon and a slightly larger one in the evening. It often happened that the anthidrotic effect was not shown until the third day, but generally the effect of a single dose lasted for several days. Out of sixty-five trials on thirteen patients, 60 per cent. were completely successful, and in 22 per cent. the sweating was moderated. The drug is soluble with difficulty in water, but dissolves more readily in alcohol. Its taste is said not to be disagreeable. Some trials of an alcoholic solution in the form of a lotion, for localized sweating, proved satisfactory.

Dr. Hartleib[2] has used this drug in the form of an alcoholic solution, 1 part of camphoric acid and 11 of alcohol, in glycerine solution, and in aqueous solution with the addition of bicarbonate of sodium. In **Angina** of various forms, ½ to 1 per cent. solutions were employed as a gargle and as a local application, but the remedy appeared to possess no advantage over the drugs used for the same purpose in chronic bronchitis and in pulmonary tuberculosis, though some patients claimed to receive some relief from its employment. Very favourable results, however, are claimed to have followed its employment in cases of **Chronic Cystitis,** three out of five being absolutely cured within three to six weeks, the remedy in these cases being employed in ½ per cent. solution, with which the bladder was washed out twice daily. Stronger solutions than 1 per cent. cause too much irritation and should not be used, although the author recommends the plan of washing the bladder with 8 grains, given three times daily. It also produces more favourable results in the treatment of the **Night-Sweats** of numerous phthisical cases, while unfavourable after-effects were never noted.

REFERENCES.—[1] Abs. from "Bulletin Médicale," and "New York Med. Journ.," Oct. 4, 1890. [2] "Cent. für Klin. Med.," No. 5, 1891.

CANTHARIDES.

In a paper "On the action of the cantharidinates," Professor Liebreich[1] describes his "new remedy" for tuberculosis. He employed the cantharidinate of potash because "tinctures vary so much in strength, and they are very dangerous." No attempt is made to show that this drug has any specific relation to tuberculosis or to the tissues and organs for which it was used. It was employed as an irritant, and it is difficult to understand why a drug which has such a strong affinity for the kidneys and urinary organs, that its physiological action cannot be induced without exciting or inflaming them, should have been selected in preference to other irritants which would have been equally capable of producing the purely local effects which Professor Liebreich desired. His whole theory appears to be based on the view that "if

we can procure the exudation of serum at will in a diseased spot, we may thus convey a remedy to that spot through the blood, and thus intensify the disinfecting action of serum itself." Prof. Liebreich will have done some service if, by directing attention to the drug, he reminds the profession of its powerful and well defined sphere of action in kidney and urinary disorders. It is when there is inflammation of the secreting tubes of the kidney, **Albuminuria** with **Desquamation,** such as we observe in the acute nephritis following scarlet fever, or in **Acute Cystitis** from simple inflammation, that cantharides is a specific. The dose must not exceed 1 minim of the tincture in such cases. As a local application for superficial wounds or burns with great irritation, no remedy is more effectual than a $\frac{1}{1000}$ solution of the tincture of cantharides with water. Dr. Sidney Ringer has found minim doses of the tincture valuable for the **Diurnal Enuresis of Women.**

REFERENCES.—[1] "Berlin. Klin. Woch," Mar. 2, 1891; [2] "London Med. Recorder," Mar. 20, 1891.

CASSIA ALATA.

This drug has recently been used with most satisfactory results in a military hospital at Noumea, New Caledonia, for **Eczema** of the face, simple **Herpes Intertrigo, Herpes Circinata,** and chronic eczema. It was employed in the form of an ointment, which is made as follows:—

℞ Cassia Alata Leaves, 100 parts | Crystallizable Acetic Acid, 150 parts
Distilled Water, 300 parts

Bruise the leaves, exhaust them by maceration, press out the liquid, and evaporate it on a water-bath to the consistence of an extract. The average yield is 37 per cent., a very large one. The ointment is to be made by mixing the extract with four times its weight of lanolin. In mild cases, or with more delicate patients, half the quantity of extract is used.

REFERENCE.—"Therap. Gaz." Nov. 15, 1890.

CATHA EDULIS.

This plant, which is found in the south of Arabia, Abyssinia, and tropical Africa, probably contains some principle allied to caffeine. Dr. Leloup states that he has seen a number of persons after taking it able to go three days and nights without sleep and without experiencing fatigue. It seemed also to increase the muscular powers of even elderly people. The author has used it for the cure of **Insomnia,** and also mentions three cases of **Migraine** cured by a tincture of the plant. No dose is mentioned, but as the infusion of the leaves is employed by the natives of Arabia in large quantities to take the place of tea, it may be administered freely.

REFERENCE.—"Bulletin Gén. de Thérap.," Sept. 15, 1890.

CETRARIN.

This is a bitter principle obtained from Iceland Moss. Some recent investigations by Prof. Robert show that its action is to excite movements in the stomach and intestines, while in too large doses it is anti-peristaltic. It has been proved useful in the treatment of **Chronic Constipation,** and in **Anæmia** and **Chlorosis** ; in the latter class of cases it increases both the red and white blood corpuscles. It is said to be also a mild stimulant to the nervous system. The dose used was 1½ grains.

REFERENCES.— "Pharm. Zeit.," Aug. 13, 1890, p. 504; "Wiener Med. Blät.," Dec. 11, 1890.

CHLORALAMIDE.

Dr. Malaceowsky[1] as a result of his numerous experiments upon animals concludes that : (1,) Chloralamide produces sleep as the result of its action on the brain ; (2,) It diminishes the excitability of the brain ; (3,) It diminishes the excitability of the spinal cord ; (4,) It prevents the production of co-ordinated movements by its action as a depressant on the central nervous system ; (5,) The interference with the production of reflexes is attributable to its action on the reflex centres ; (6,) It lowers blood pressure through paralysis of the vaso-motor centre ; (7,) It reduces the frequency of the pulsation of the heart through action on the cardiac inhibitory centre ; (8,) It reduces temperature, and this is due partly to the increase in heat-dissipation and partly to the diminution in heat-production ; (9,) It produces various forms of functional disturbance in the gastro-intestinal apparatus of the dog.

Dr. John Gordon,[2] of Aberdeen University, has made a very careful series of experiments in respect to the action of this drug. His results are summarized as follows : (1,) The reflex irritability of the spinal cord was diminished ; (2,) Peripheral sensation was not reduced ; (3,) On frogs there were hypnotic action, slowed respiratory and cardiac actions, abolition of reflexes, and subsequent recovery of the normal condition ; (4,) Blood pressure was slowly reduced with large doses ; (5,) Pulse rate was not affected ; (6,) Respirations were reduced and finally abolished ; (7,) The conductivity of motor nerves was destroyed, and was not restored by subsequent washing in salt solution ; (8,) The irritability of muscle substance was destroyed, and was not restored by subsequent washing in salt solution ; (9,) The excretion of urea was increased by small doses—0·3 to 0·6 gramme—but was diminished by large doses—2 to 3 grammes ; (10,) The excretion of phosphates was diminished with both large and small doses ; (11,) The excretion of the fluid constituents of the urine was not con-

stantly affected by the smaller doses, but was diminished by the larger doses; (12,) Reaction of urine was not influenced; (13,) Colour and odour of urine were not affected; (14,) No albumen was detected; (15,) Action on the skin was negative; (16,) Temperature was not affected; (17) Digestion did not appear to be interfered with; (18,) Hypnotic action in the healthy was induced with doses of 1·25 gramme and upwards; (19,) In painless insomnia the results were highly reliable: (20,) In insomnia with moderate pain the results were fairly reliable; (21,) In insomnia with acute pain it was not reliable; (22,) The analgesic action was feeble; (23,) The hypnotic effect followed usually within half-an-hour after exhibition; (24,) The sleep induced was tranquil, pleasant, and natural, and the awakening free from confusion or depression; (25,) No deferred action; (26,) No craving for the drug was noticed; (27,) The point of tolerance was not readily reached; (28,) The doses found most reliable were from 2 to 3 grammes; (29,) Giddiness and inco-ordination and headache sometimes followed administration; (30,) In **Senile Insomnia, Pulmonary Disease,** and **Hysteria** the results were highly satisfactory.

REFERENCES.—[1] "Les Nouveaux Rèmedes," Oct. 24, 1890; [2] "Brit. Med. Jour.," May 16, 1891.

CHLORAL ANTIPYRIN (Hypnal).

This substance is formed when concentrated solutions of hydrate of chloral and antipyrin are mixed. An oily substance is produced which when allowed to stand crystallizes. Although it has been shown to be a definite chemical compound, neither the chemical characteristics of chloral or antipyrin are lost. Many differences of opinion have been expressed as to the value of this remedy. Prof. Sée[1] has published a valuable paper upon this subject in which he arrives at the following conclusions: (1,) Mono- and bichloralantipyrin, in doses of 45 grains, are hypnotic remedies, comparable to chloral; (2,) They have no paralgesic action; (3,) They should be prohibited in cardiac cases, above all when there is any disturbance in compensation; (4,) They may, however, be administered with impunity as hypnotics in cases of aortic disease, if compensation is perfect; (5,) They have no action in dyspnœa, whether of cardiac or pulmonary origin; (6,) In some cases they seem to slightly augment diuresis; (7,) They are almost as irritating to the digestive tube as chloral; (8,) Compared to sulphonal and the other hypnotics of the chloral series (such as chloralamide and chloralimide), mono- and bichloralantipyrin are much inferior, on account of their depressing action on the blood-vessels and heart, even although that depression be less than that which follows the use of chloral.

Dr. Quinquand[2] as a result of independent observation adopts very similar conclusions.

REFERENCES.—[1] "La Médicine Moderne," Dec. 18, 1890; [2] "Therap. Gaz," Sept. 15, 1890.

CINCHONIDINE (Sulphate of).

This salt is but one third the cost of the sulphate of quinine, but the experience of Dr. de Brun, of the French Hospital at Beyrouth, tends to show that it is equally effectual in the treatment of simple **Intermittent Fever** and in chronic malarial poisoning. In some cases he regards it as even superior, and that patients maintain their health longer and are more capable of resisting fresh malarial poisoning than after a similar course of quinine. He has used this remedy in **Neuralgia**, both of malarial origin and in non malarial cases with success. The dose usually employed is about one-third greater than quinine.

REFERENCE.—"Révue de Méd.," Sept., 1890.

COCOA-NUT.

Dr. Parisi, of Athens, as a result of an accidental effect in his own person, has been employing the milk and pulp of the cocoa-nut as a remedy for **Tape Worm**, and was successful in all the cases in which he used it, the tænia always coming out entire and dead. The treatment he has adopted as most convenient is as follows: The patient, while fasting, is to take in the morning the milk and pulp of one cocoa-nut. No cathartic is needed, and no particular care necessary.

COMBRETUM RAIMBAULTII.

This plant has a great reputation among the natives of the West Coast of Africa as a remedy for **Hæmaturic Bilious Fever**; its local name is *Kinkéibah*. A missionary named Raimbault reported several cases treated with it to Professor Heckel. The evidence of these cases showed that: (1,) It may act as an active tonic; (2,) That it is diuretic; (3,), That it may act as an emetic or check emesis; (4,) That it is capable of producing marked bilious diarrhœa.

Professor Heckel[1] subjected the leaves to chemical analysis, and found that the principal constituents were tannin in extremely large amount and nitrate of potassium; and although these leaves are supposed to possess cholagogue properties, no principle was detected which could justify this assumption. He thinks it evident that the claimed tonic and diuretic properties are apparently justified by the presence of tannin and the nitrate of potassium, while its chemical composition gives no plausible explanation of its other alleged virtues.

We consider that Professor Heckel's experiments only serve to

prove the difficulty of determining the therapeutical properties of a plant by its chemical analysis. If he had watched the results produced by a preparation of the plant on a number of healthy individuals some definite idea of its physiological and therapeutic capacities might have been obtained.

REFERENCE.—[1] "Les Nouveaux Remèdes," May 24, 1891.

CONDURANGO.

As a result of careful experiments made at the Cochin Hospital, Dr. Guyenot has formed the following conclusions respecting this drug: (1,) Condurango employed in the form of a powder appears to be remarkably efficacious in painful affections of the stomach, and especially in the case of **Gastric Ulcer** and irritation of the gastric mucous membrane; (2,) Cases of **Cancer** of the stomach, which have been claimed to be cured as the result of treatment with condurango are certainly to be regarded as errors in diagnosis. In all probability the majority of them were cases of ulcerative gastritis.

In respect to condurangin, a glucoside obtained from condurango bark, he notices an extremely curious and interesting action. It causes a veritable **Locomotor Ataxia**, which is due, without doubt, in view of its late appearance, to the formation of some toxic substance produced by the splitting up of condurangin in the organism.

In view of the fact that the chemical nature of condurangin is not yet thoroughly established, and its physiological action not being thoroughly understood, he considers that the bark of condurango should be employed in therapeutics, and not condurangin.

REFERENCE.—"Bulletin Gén. de Thérap.," No. 32, 1890. "Therap. Gaz.," Nov. 15, 1890.

COPPER (Arsenite of). (See also "Arsenic.")

Dr. Boardman Reid having found this remedy of great value as an antispasmodic in **Cholera Morbus** and **Colic**, when used in very minute doses, considered that it might be useful for **After-pains of Labour**. He describes a case of a woman, aged thirty-two, who had persistent and severe after-pains during her fifth confinement, which entirely resisted all the usual remedies. The trouble had gone on some five days, and was seriously menacing the patient by interfering with her rest and nutrition. He ordered it in doses of $\frac{1}{1000}$ of a grain every half-hour. Relief was rapid and complete. In a second case relief was even more rapid; morphine had, as in the first, been administered with unsatisfactory results. Two tabloids containing $\frac{1}{200}$ of a grain each were dissolved in a small half-tumbler of water; and 1 teaspoonful was given every half-hour. In a third case, where the salt was given

pure in a dose of the same strength as in the first case, relief was also prompt; in this instance opiates were contraindicated owing to the condition of the patient's kidneys. Another case, under the care of Dr. W. B. Stewart, was cured of after-pains by doses of the pure salt. Two other cases, however, received no benefit from arsenite of copper. The first was completely relieved by morphine, the second by chlorodyne. In these cases, Dr. Reid observes, the tablets of the arsenite administered to the patient were new samples, not from the manufacturer who supplied the salt in the other cases. It was found almost impossible to make them dissolve, and this might have accounted for the failure of the remedy in these cases.

REFERENCES.—"New York Times and Reg.," Dec. 6, 1890; "Brit. Med. Journ.," Jan. 24, 1891.

CRADINA.

This is a ferment obtained from the juice of the common fig-tree isolated by Dr. Mussi. It is insoluble in water, but dissolves readily upon the addition of a trace of acid or alkali, and the solution, placed in contact with moist fibrin, effects complete and true digestion. It contains nitrogen, and in the dry state it forms a friable, semi-transparent, dark yellow, amorphous mass, yielding an amber-yellow powder. In water it swells, but does not dissolve, though upon being shaken it imparts to the liquid a milky appearance. When dissolved by the aid of alkali or acid, a concentrated solution is dark yellow, but becomes colourless upon being diluted. It differs from pepsine in maintaining its digestive power in an alkaline liquor, and from papain in being insoluble in water, not precipitated from solution by alcohol or lead acetate, and in its activity not being diminished in the presence of hydrochloric acid. In a neutral liquid it is devoid of digestive power, and it has no action upon starch.

REFERENCE.—"London Med. Record," May 28, 1891.

DIURETIN.

Some observations on this salt (which it will be remembered is a sodio-theobromine salicylate) made by Mme. K. Pomerantz[1] under the direction of Dr. Dujardin-Beaumetz, have resulted as follows: (1,) When given in doses of 15 grains every two or three hours diuretin is a much stronger diuretic than caffeine; (2,) When there is considerable cardiac degeneration it should be employed with some caution, especially when there is albuminuria; (3,) Under the influence of diuretin the force of the cardiac contractions is scarcely affected; (4,) Diuretin rapidly increases the quantity of urine passed, and the diuretic effect lasts twice or three times as long as that produced by

caffeine; (5,) The activity does not wear off readily as the patient becomes accustomed to the drug; (6,) Micturition is not rendered difficult or painful; and (7,) Diuretin has no action on the central nervous system. Both theobromine and diuretin give good results in cases of dropsy when diuresis is possible; but as the action appears to consist of direct stimulation of the renal epithelium, it is obvious that the activity of the drug is seriously interfered with in cases of advanced kidney disease.

We may mention that the hypodermic injection of diuretin is almost invariably followed by local abscesses. It should be given in milk, or chocolate before eating.

Koritschoner[2] employs the following formula:—

℞ Salicylate of Soda and Theobromine 4 to 8 grammes | Warm water 150 grammes

M. Dose.—A tablespoonful every hour or every two hours.

He considers that little benefit can be expected from a less quantity than 60 grains a day, and he appears to have given very much larger doses to his patients. Out of thirty-eight cases of general dropsy in which it was used, in only five cases did it prove to be without action; these were cases of chronic Bright's disease, arterio-sclerosis with fatty myocardium, tuberculosis of the lungs and serous membranes; all had arrived at the last degree of cachexia, and succumbed a few days after their admission to the hospital. In ten other cases the action of the salt was much superior to that of digitalis, acetate of potash, and all other diuretics that had been administered, though but moderate benefit followed the administration of the remedy. In the majority of the patients (twenty-three out of thirty-eight) the effect obtained was excellent, the dropsical effusions rapidly disappeared, and general amelioration followed. There is even danger that, under the influence of the abundant diuresis caused by the drug, the ascites and œdema may disappear so speedily as to cause dangerous collapse. On this account, Koritschoner urges that, in cases of abundant effusions, the remedy should be given with considerable caution; he would, in fact, advise always to begin the treatment by a dosage of 4 grammes a day, and, if this quantity makes no sensible increase in the urine, it may be augmented by 1 gramme a day till a sufficient result is obtained.

The diuretic action of this medicine is said to be more marked in **Cardiac Dropsies** than in renal or hepatic, yet it may render precious service in **Chronic Bright's Disease.** In fact, in this disease, where all the ordinary diuretics are apt to fail, the quantity of urine excreted often becomes augmented five or six times under the influence of the

salicylate of soda and theobromine. In some cases of Bright's disease, the remedy seems to exert its principal action on the intestines, producing an abunda serousnt diarrhœa, which, in a very short time, causes the œdema to disappear, without too great enfeeblement of the patient.

According to the researches of Schrœder and Gram, the diuretic effect of the salicylate of soda and theobromine is due to the excitant action of the drug on the renal epithelium. As the epithelium is the principal seat of lesion in chronic parenchymatous nephritis, it might be feared that diuretin would be injurious in Bright's disease. The observations of Koritschoner show that this fear is not well founded, and that diuretin excites the renal functions without irritating the kidneys. Thus, in two cases of **Acute Scarlatinous Nephritis,** when Koritschoner gave diuretin in large doses, the patient recovered with astonishing rapidity and without any complications. Under the influence of the medicament, the blood-corpuscles and hyaline casts were seen from day to day to disappear from the urine. This same favourable action of diuretin on the nephritic processes has also been noted in chronic Bright's disease.

Hoffmann[4] has made a very careful study, and his general conclusions are as follows : (1,) It is of marked service in general dropsy. It is of less use in accumulations of fluid due to inflammations of serous membranes. Where there is congestion of the portal circulation it is of no use ; (2,) Its diuretic action depends upon its influence on the kidney epithelium, but also exercises a favourable influence on the circulatory apparatus. In daily quantities of 75 grains it does not produce any unpleasant effects ; on the contrary, it improves the general condition ; (3,) It may prove of service where digitalis and caffeine have failed, and may be given in combination with heart tonics.

Dr. Badcock[5], of Chicago, considers that : (1,) It is a diuretic of great power and promptitude, suitable to all forms of dropsy ; (2,) Not increasing arterial tension, it is likely to succeed where digitalis, caffeine, and their congeners fail ; (3,) In cases of cardiac dropsy, with great feebleness of the pulse and arhythmia, it will strengthen and regulate, rather than depress, the heart's action ; (4,) It appears to cause no irritation of the stomach or kidneys ; (5,) It requires to be given to the extent of from 90 to 120 grains daily, and preferably in small doses frequently repeated ; (6,) It is best administered either in solution in warm water or in gelatin-coated pills, since, if exposed to the air in powders, it undergoes change, with a precipitation of much of the insoluble theobromine.

REFERENCES.—[1] "Bulletin Gén. de Thérap.," No. 30, 1890; [2] "Boston Med. and Surg. Journ.," Oct. 30, 1890; [3] Résumé, see "Med. Chron.," June, 1891; "Therap. Gaz.," Aug. 15, 1891; [4] "Archiv. f. expt. Path.," Heft 1, xxviii., 1890; [5] "New York Med. Journ.," July 11, 1891.

DUBOISINE.

Dr. Ostermayer[1] regards the sulphate of duboisine as superior to hyoscine in not having the inconveniences of the latter drug. It is chiefly a **Hypnotic**, producing sleep in from twenty to thirty minutes, and is to be given in doses varying from 1 to 3 milligrammes, according to the character of the case. It is said to produce no dangerous or disagreeable symptoms, and although continuous use produces tolerance, by leaving it off for a short time the full effect can be again obtained.

REFERENCE.—[1] "Lancet," Oct. 10, 1891.

EPHEDRA VULGARIS.

This is the "steppe raspberry" which grows freely in all parts of Russia, where it has a popular reputation as a remedy for **Rheumatic** and **Syphilitic Affections.**

Dr. P. V. Bekhtin[1] has tested it upon sixteen patients, of whom four were suffering from acute articular rheumatism (in one case complicated with pericarditis), two from chronic, and two from acute muscular rheumatism, six from chronic and one from rheumatic sciatica, and one from rheumatic osteomyelitis. The remedy was used in the form of an "infuso-decoction" of 1 drachm of powdered stems and roots of the plant, and 6 ounces of water, a tablespoonful being given every two hours.

The following are the principal conclusions arrived at: (1,) The steppe raspberry is decidedly one of the most valuable anti-rheumatic remedies yet known; (2,) The best results are obtained in cases of acute articular and muscular rheumatism. Even on the second day of the treatment pain greatly decreases, and the pulse and respiration become slower while growing fuller and stronger. In a couple of days the temperature returns permanently to normal, and articular swelling completely disappears, and in seven or ten days the patient is quite well. In the complicated case the pericarditis subsided, together with the other morbid phenomena; (3,) In chronic cases the remedy acts somewhat less strikingly and less rapidly. Of the eight cases, in four (muscular rheumatism) a complete cure was effected, while in the other four (two muscular, two articular) a great improvement was obtained; (4,) In rheumatic osteomyelitis and sciatica, however, the remedy

seems to produce only slight and temporary amelioration. It may be added that in both the cases all ordinary anti-rheumatic drugs (salicylate of sodium, antipyrin, antifebrin, salol, phenacetin, etc.,) utterly failed to afford any relief; (5,) Ephedra invariably has a beneficial effect on the gastro-intestinal tract, habitual constipation disappearing, etc.; (6,) The remedy also appears to possess a diuretic action, which is especially pronounced in cases of articular rheumatism.

It will be remembered that in our last edition[2] we called attention to Rubus Chamæmorus (the yellow raspberry), which has a reputation in Russia as a diuretic, and afforded very satisfactory results in the hands of Professor Popow.

Some time ago Professor Nagai, of Tokyo, succeeded in isolating from ephedra vulgaris, an alkaloid, which he termed "ephedrin." According to Professor Kobert, the substance, when injected into dogs and cats (in the dose of 0·2 gramme) causes intense excitement with general convulsions, exophthalmos, and mydriasis. Dr. Miura, of Tokyo, uses hydrochlorate of ephedrin as a mydriatic.

REFERENCE.—[1] "Brit. Med. Jour.," Aug. 8, 1891; [2] "Medical Annual," 1891, p. 50.

ETHYLENE BROMIDE.

This occurs in the form of a light brownish-coloured liquid, with an odour somewhat similar to that of chloroform, and a taste which is at first sweetish, and becomes afterwards burning. At the freezing-point it solidifies into a snow-white crystalline mass; it boils at 300° C. Its specific gravity is 2·163, and it contains 90·9 per cent. of bromine. This fluid is insoluble in water, but readily mixes with alcohol [? ED.] and oil, and may be readily administered in the form of an emulsion.

Dr. Donath[1] has employed it to take the place of bromide of potassium in **Epilepsy,** and as the result of its use in twenty cases[2], he considers that the action of the bromine is accentuated and exerted more powerfully than in any other bromine combination as yet known. The author recommends its administration in milk, his favourite formula being :—

℞ Ethylene Bromide		Oil of Peppermint	♏ij
Spirits of Wine	āā ♏xxxij		

Of this, 5 to 15 drops may be administered two to three times daily, or it may be administered in gelatine capsules, in doses of 3 drops, mixed with 6 drops of oil of sweet almonds, of which. 2 to 4 may be taken two or three times daily, and, according to the author, it is likewise suited for subcutaneous administration in oily solutions.

The dose may be increased progressively until 70 drops is reached.

[We have obtained specimens of this drug from two different firms of druggists, and neither of them is soluble in alcohol.—Ed.]

References.—[1] "Pharmaceutical Post," June 14, 1891; "Therap. Gazette," August 15, 1891; "Therapeutische Monatshefte," June, 1891.

EUPHORBIA PILULIFERA.

Dr. John Aulde, in a paper on this drug, speaking of its great value in **Asthma**, says: "Where persons are under forty years of age and fairly well nourished and free from organic diseases, attacks of asthma may be controlled, if not wholly arrested, by the judicious employment of euphorbia. I have not found it so efficient for securing immediate relief as the hypodermic use of small doses of morphine and atropine, along with the occasional addition of 1 drop of trinitrin (the 1 per-cent. solution of nitro-glycerine). Where we have to contend with a disordered condition of the alimentary tract, I have found the alternate use of a modified Fothergill pill valuable. The tincture is ordered, 30 drops in water or glycerine every four hours for several days, and this is followed by the pill made according to the annexed formula":—

℞ Strychnine Sulphate	gr. $\frac{1}{10}$ – $\frac{1}{8}$	Extract of Gentian	gr. j
Powdered Ipecac.	gr. $\frac{2}{3}$	Oil of Wintergreen	gtt. $\frac{1}{2}$
Powdered Black Pepper	gr. $\frac{1}{4}$		

M. et ft. pil. No. 1. Sig.—Take 1 pill after meals.

Reference.—"New York Med. Jour.," July 18, 1891.

EUPHORIN.

Under the above name, phenyl-urethan has been described in some recent articles (*see* "Phenyl-urethran").

EUROPHEN.

Chemically this is an isobutyl-ortho-kresol-iodide, and is formed by the action of iodine on isobutyl-ortho-kresol. It is an amorphous yellow powder with a peculiar aromatic smell, which disappears almost entirely when it is dissolved in or mixed with some menstruum. It is insoluble in water and glycerine, but very soluble in alcohol, ether, chloroform, and collodion. In fatty oils it dissolves to the extent of 25 per cent. Its solution in all these menstrua is apt to decompose, and it deposits an iodine compound which is soluble in water. In contact with water or with secretions iodine is slowly given off, and on this depends no doubt its **Antiseptic** action. Mixed with fat, lanolin, or vaseline it keeps well, but it cannot be prescribed along with starch

or with most metals, as the free iodine causes discoloration. It can be used in all cases where iodoform is useful, and has the advantages over it of being non-poisonous, of having comparatively little odour, and of being so light that a small weight can be dusted over a large area.

REFERENCE.—"Pharmaceut. Zeitung," July 15, 1891.

EXALGINE.

This analgesic has been fully described in our previous issues. Mr. Peter Boa[1] suggests the following as a useful formula for prescribing the drug :—

℞ Exalgine	gr. xij	Aq.	ad	℥ij
Sp. Vini Rect.	℥j			

He finds that it is better to dissolve the exalgine in the water by heat, and then add the spirit. He found that when he dissolved 16 grains in 1 fluid ounce of water by heat, and allowed the solution to cool, a copious recrystallization took place. To one ounce of another solution of similar strength, while warm, ℥ss rectified spirit was added. The solution was permanent.

Some cases of toxic poisoning have been recorded. Dr. Buisson[2] had a patient who, through a mistake, took four 15 grain doses. The following symptoms were noticed—severe vertigo, clutching his bed and crying out that he was falling over a precipice, with extreme **Dyspnœa** and pronounced **Cyanosis.** All these symptoms, however, disappeared during the night, and the patient made a complete recovery.

Dr. A. C. Hartley[3] records two cases in which there was great prostration, dyspnœa, loss of muscular power, and profuse perspiration; the pupils were dilated. Both cases readily recovered under the use of stimulants and fresh air. We have frequently observed the urine become almost black in patients taking this drug, no toxic symptoms being observable.

REFERENCES.—[1] "Pharm. Journ.," Nov. 29, 1890; [2] "Bull. Gén. de Thérap.," Mar. 15, 1891; [3] "Lancet," March 2, 1891.

FERRUM.

Prof. L. I. Tumas,[1] of Warsaw, has performed some experiments on dogs with a view to studying the influence of iron on the process of blood formation in such cases where it is introduced artificially apart from food.

He employed ferrum hydrogenio redactum internally, and ferrum pyro-phosphoricum cum sodio citrico, hypodermically. The following are the conclusions which he reached: (1,) In normal animals (eight experiments), iron, whether introduced through the stomach, or under

the skin, does not produce any changes either in the numerical strength of red blood-corpuscles, or in the proportion of hæmoglobin, or in the blood's bulk or weight; (2,) In such cases of anæmia (induced through venesection), in which the amount of extracted blood has not exceeded 25 per cent. of the total (four experiments), a subsequent introduction into the animal's system of chalybeates does not seem to accelerate the regeneration of blood, comparatively with such animals which do not receive any steel-preparations after blood-letting; (3,) But in cases (eight experiments) of a more abundant bleeding (from 26 to 55 per cent.), such animals as are receiving iron return to their normal state by far more quickly than those left without iron; (4,) The restoration of hæmoglobin proceeds by far more rapidly than that of red blood-corpuscles; (5,) The administration of iron does not produce any impression on the bodily temperature; (6,) On the whole, the experimental evidence fully justifies the old hypothesis, according to which iron-preparations, when introduced into the organism in an artificial or therapeutical way, develop a direct, or, so to speak, active structural influence on the blood-formation. In other words, the remedies transform in the system into ferruginous albuminates which, having undergone some yet obscure metamorphoses, come to be utilized for the formation of hæmoglobin, and thus promote the process of hæmoplastics; (7,) Rational indications for the therapeutic use of chalybeates are constituted by cases of chlorosis and anæmia arising from large acute or chronic blood-losses.

C. A. Socin,[2] in reference to the question of the absorption of iron in the alimentary canal, has made a series of experiments upon dogs and mice. With the mice five different varieties of food were given: (1,) Food absolutely free from iron; (2,) The same iron-free food with hæmoglobin added; (3,) The same food, but with hæmotogen added; (4,) The same food, but with the addition of ferric chloride; and (5,) Ordinary hard-boiled yolk of egg, together with iron-free starch, cellulose, and water.

The following are the conclusions at which he arrived: (1,) The organic iron combinations of yolk of egg are absorbable; (2,) Filtered urine, when ordinary diet is taken, contains no proportion of iron quantitatively estimable; (3,) Serum albumin prepared from hæmoglobin-free serum is devoid of iron; (4,) It is as yet impossible to prepare an artificial diet containing all the food stuffs essential to life; (5,) Simple comparisons of the quantity of iron in the food and the excreta respectively leave the question as to the relative absorbability of iron combinations as yet undecided.

Ferric Bromide.—A strong claim is put forward by Dr. Hecquet[3] for

the use of this bromide salt in many affections where a sedative, but not depressing action is required, or when we wish to stimulate without exciting. He has used it with great success, especially in cases of **Spermatorrhœa.** It was also frequently found useful in cases of **Chloro-anæmia, Leucorrhœa, Hysteria, Amenorrhœa, Hydræmia of Pregnancy, Chorea, Epilepsy, Diabetes, and Tuberculosis.** In conjunction with Dr. Vacossin a series of trials were made in the Abbeville Hospital on its action in cases of **Cardiac Hypertrophy,** with the result that Magendie's observations, made more than fifty years ago, were confirmed, the patients being strengthened and relieved by the calming of the palpitation and of the dyspnœa. This combination is well borne, even by irritable stomachs. It may be taken in solution, or in tabloids, the dose being from 3 to 5 grains. The action is more rapid than that of most iron compounds, as its good effects begin to manifest themselves in cases of chlorosis during the first week of administration, a complete cure being generally obtained in a month. Dr. Hecquet has found by experience that the ferric salt Fe_2Br_6 acts both more rapidly and gives more permanent results than the ferrous salt $FeBr_2$, and hence he has latterly confined himself to prescribing the former, which he does not hesitate to say is endowed with exceptionally valuable properties, and deserves to be far better known and more employed than it has hitherto been.

Excretion of Iron Salts.—Jacobi[4] has made some interesting experiments upon dogs and rabbits in reference to the manner in which iron is excreted. He used the iron by injection into the circulation of dogs and rabbits, employing a double salt in order not to coagulate albumen. His results agree with Hamburger's conclusion that only a small amount of iron can be absorbed by the bowel when iron salts are given by the mouth. After injecting iron salts into the blood, he found that the iron could be detected in the urine only for two or three hours afterwards. It must, therefore, be stored up in the organism; and as the result of further experiments on rabbits, he found that after injection of iron salts into a vein, about 10 per cent. of the iron is excreted by the bowel, liver, and kidneys together, about 50 per cent. is deposited in the liver, and the rest is deposited in the spleen, kidneys, intestinal walls, and other organs. It is all removed from the blood within two or three hours after administration.

Dr. R. Gottlieb,[5] making experiments in reference to the same subject, states that after the intravenous injections of iron, very large quantities of the metal were always discharged into the intestine averaging up to 70 per cent. After protracted administration of iron, it was found to accumulate largely in the liver. His investigations do

not correspond with those of Hamburger, and further experiment appears to be necessary before decided conclusions can be arrived at in this matter.

Levulose Ferride.—Dr. John Aulde,[6] speaking of the tendency of iron to accumulate in the liver, says that small doses do not show this tendency, but they may serve to increase its functional activity when given in a soluble, non-astringent form. Also while large doses decrease the amount of work which the muscles are capable of performing, small doses increase their powers. He recommends the preparation of levulose ferride as the best when the milder stimulating action is required. This is prepared by mixing malt sugar with iron (the preparation of iron is not stated), and stirring them together while exposed in a water bath. It is readily soluble in an excess of water, is non-astringent, and very palatable. The dose used appears to have been 3 grains in tablet form after meals.

Succinate of Iron.—The hydrated succinate of iron has been recommended as a remedy for the relief of jaundice resulting from obstruction of the biliary duct by calculi. Good results appear to have been obtained, but the preparation, which is of a cinnamon brown colour, and quite insoluble in water, is not very elegant. Investigations made by Dr. W. T. Wenzell[7] have led him to suggest the liquor ferri et ammonii succinatis as a more convenient preparation. The following are the directions given for its manufacture: Dissolve 50 grains of succinic acid in 3 fluid ounces of water, neutralize nearly with ammonia, and dilute to 6 fluid ounces. Transfer the solution to an 8 ounce bottle, add ½ a fluid ounce of the officinal liquor ferri persulphatis and agitate well. Transfer the mixture to a filter and wash the precipitated ferric succinate thoroughly with distilled water. Next take 89 grains of citric acid, put it into a beaker, and add with stirring a sufficient quantity of ammonia-water, until the acid is dissolved and the solution neutral. Finally, transfer the moist ferric succinate to a porcelain capsule, add the solution of ammonium citrate and dissolve assisted by a gentle heat. The solution, when diluted to measure 6 fluid ounces, will contain to a fluid drachm 2 grains of the ferric succinate or 5 grains of the double salt.

It seems probable that this will prove to be a most valuable remedy in those **Atonic Conditions of the Liver** in which mercury is too apt to be used with merely temporary results, while beef tea and iron will permanently restore the functional powers. Succinic acid, we may state, which is at present seldom used in medicine, is obtained by the distillation of amber, and artificially in various other ways; thus it is invariably formed in small amount during the alcoholic fermentation of sugar.

REFERENCES.—[1] "Trans. of the Warsaw Univ. Med. Soc." vol. i.; [2] "London Med. Rec.," Jan. 20, 1891; "Hoppe-Seyler's Zeitschr. f. Physiol. Chemie," Bd. xv., Heft 2; [3] "Lancet," Feb. 14, 1891; "Therap. Gaz." April 15, 1891; [4] "Archiv. f. expt. Path.," xxviii., Heft 3 u. 4, 1891; [5] "Zeitschr. f. Physiol. Chemie.," Bd. xv. Heft 5; [6] "Med. Rec.," Oct. 11, 1890; [7] "American Jour. of Pharm.," June, 1891; "Therap. Gaz.," Aug., 1891.

GALEGA.

Dr. de la Carrière[1] has used the watery extract of galega in order to increase the secretion of milk, the dose being from 32 to 64 grains a day. He claims that not only was the secretion greatly increased in volume, but that the solids in the milk were also augmented. This is an old remedy popularly known as goat's rue, and was formerly used not only to improve the quality and quantity of the milk in nursing women, but also as a remedy in malignant fevers and for the cure of worms.

REFERENCE.—[1] "Le Progrès Méd.," Jan. 24, 1891.

GELSEMIUM SEMPERVIRENS.

If the uses which we may find for this drug in practical therapeutics are not extensive, its sphere of action is so well defined, that when given in well selected cases it will hardly fail to yield a satisfactory result. It is a powerful poison to the cerebro-spinal system, and acts more especially upon the motor-tracts. The difference between its action and that of strychnine was investigated by Raimondi in 1886. He found that while strychnine produced its effects over the whole body, gelsemium affected the posterior extremities more distinctly than the anterior ones. This hardly represents the marked difference in their action. While strychnine exaggerates the reflex sensibility, gelsemium abolishes it. There is a motor paralysis rather than spasm, and the general condition of the patient, or animal, who has taken toxic doses, corresponds more closely to that produced by hemlock than strychnine.

It is in relief of **Spasm of the Muscle** that its chief therapeutic uses are found. We might claim it as one of the most valuable specifics for **Dysmenorrhœa,** but it would be more correct to speak of it as a remedy for uterine spasm. It will not relieve the dull heavy pain in the back, associated with congested conditions of the uterine organs, nor will it overcome the pain due to obstruction of the flow or to the passage of blood-clots; but when we have a uterine colic, manifested *by sharp pains chiefly felt in the abdomen*, and extending from there to the back, gelsemium may be relied upon to quickly relieve them. These pains resemble those which herald the approach of labour, and sometimes when these are particularly distressing, gelsemium may be

used without any danger of interfering with the natural course of labour.

For **After-pains** gelsemium has been used with success by many practitioners, but here its use is limited to spasmodic contractions of the uterus, and not to those regular expulsive efforts which are essential to the removal of blood-clots. These two varieties of pain may frequently be observed during labour, for in addition to the regularly expulsive efforts, and between them, the patient may complain of sharp abdominal pains passing backwards and upwards, which cause great distress, and often interfere with the progress of labour. For these gelsemium may be given with the certainty of affording relief, and without interfering with the expulsive efforts.

Some authorities speak of the necessity of giving the remedy in large doses of the fluid extract, until full physiological effects are observable ; but we have always found that 5 to 10 drops of the tincture given every fifteen minutes, until pain was relieved, proved sufficient in any of the above conditions where the remedy was indicated. We have no personal experience of it in **Tetanus,** for which it has been used with success. In a case recorded by Dr. John Read, 40 drops of the fluid extract were given every two hours until the symptoms subsided, and then 20 drops every two hours. The patient took 4 drachms a day for a week. We have seen decided physiological effects produced by much smaller doses of the tincture, and caution is needed because there is a great variation in the strength of the preparations that are supplied.

Dr. Imogene Barrette reports a case of spasmodic **Torticollis,** in which the spasm was unusually severe, and which resisted all ordinary methods of treatment. The use of 13 minims of the fluid extract every two hours, night and day, produced "notable improvement," but toxic symptoms, consisting of headache and diplopia, were experienced.

Undoubtedly gelsemium is indicated for "muscular spasm," but for torticollis we have found solanin, even in moderate doses, more effective. Gelsemium gives great relief in **Spasmodic Affections of the Bladder.** In one such case the spasms were so severe as to be followed by the discharge of blood, and the use of a sound to examine for the possible presence of a calculus was rendered most difficult owing to the contraction of the urethra. This patient's bladder was carefully examined after death, and although greatly thickened and contracted, there was no foreign body contained in it, or morbid condition of its walls. The spasm was of distinctly central origin, and here gelsemium relieved. It has been used for that enuresis which depends upon a paralytic condition of the sphincter muscle

with success, and also for acute catarrhal condition of the bladder, but it is probable that in such cases the catarrh was secondary to the loss of nervous power.

Clinical experience has taught the writer to look upon this drug as having a specific effect upon spasms of the involuntary muscles, and it appears probable that it might be used sometimes for flatulent abdominal colic with good effects, although we are not acquainted with any recorded cases in which it has been used. It has been employed with success in spasmodic affection of the laryngeal muscles, such as in **Laryngismus Stridulus** and **Periodic Aphonia.**

The editor of the "Therapeutic Gazette," in a recent article, speaking of its action as a febrifuge, says: "Its antipyretic action is, however, altogether too variable to warrant its use in fevers, and it is altogether probable that it does not produce any fall in the temperature, except through a depressant action on the heart and circulation, so that there is nothing to be gained by substituting this drug for the more certain and manageable antipyretics."

We should be sorry to discontinue the use of gelsemium in fever, because antipyrin proved a more effectual agent in reducing temperature. If the reduction of temperature was all that was needed in the treatment of any disorder in which "fever" was a prominent symptom, this argument might apply, but none of the antipyretics have yet *cured* a case of fever, and what we want are remedies which will cause a reduction of temperature only as a part of the curative process, and as an indication that the patient is making satisfactory progress, and not drugs which make a marked effect upon the temperature chart, and none upon the disease.

Gelsemium is one of the former class of remedies, and is only useful when it meets the precise physiological disturbance from which the patient is suffering. We may find this in **Typhoid Fever, Measles, Russian Influenza,** and various forms of **Intermittent Fever,** the result of a poisoned condition of the blood. But it would be a mistake to suppose that it was the best remedy for any one of these diseases. It is when the cerebro-spinal system appears to be chiefly affected by the fever that we should use gelsemium.

The marked symptoms presented are the *heavy listless condition of the patient*, and the *dark congested appearance of the face*. There is none of that active excitement of the nervous system that we find so frequently among patients with a high temperature. The patient prefers to be let alone, his general expression shows that he is uneasy. There is not the high tension pulse so commonly found in fever, it is more usually full, but easily compressible. The tongue is

more often covered with a moist fur than dry, and the chief symptoms complained of are *pains in the back and limbs*, not severe, but such as to give rise to a general sense of oppression and uneasiness.

Patients presenting this condition were met with daily during the epidemic of Russian influenza, and gelsemium gave marked relief to the symptoms, and also reduced the fever. Sometimes the second dose (Tinct. ♏v every hour) would produce a free perspiration, followed by entire subsidence of the symptoms. Out of three hundred and forty-seven cases treated, many of them severe, and a large number of them being persons of a very advanced age, the mortality was nil, and we can ascribe this result in a large measure to the use of gelsemium for the fever in preference to "antipyretics."

Gelsemium has probably a greater effect upon the **Muscles of the Upper Eyelid** than any other drug. One of the most commonly observed symptoms when it is used in poisonous doses is **Ptosis**, and when this condition arises from other causes, it may be given in moderate doses as a direct stimulant to the nerve supplying the muscle. When used for the cure of headache, small doses are necessary, or aggravation is produced. It is in the **Dull Congestive Headaches** that it proves useful ; the patient may complain of the sensation of a "*band encircling the head*" ; the pain is frequently also felt in the neck, and the patient feels easier when the head is supported. Such headaches are frequently found in patients who suffer from spinal irritation or neuralgia, the cervical portion of the spine being affected. Some patients who suffer from **Nervous Insomnia**, and who are prevented from sleeping by any slight cause which stimulates the circulation of the brain, are speedily relieved by a dose of 10 or 15 drops of the tincture.

We regard gelsemium as a most valuable therapeutic agent, as it supplies a place in the Materia Medica which is not readily filled by other drugs. In cases where its use is indicated, it is rarely necessary to give more than 2—10 drops of the tincture.

HYDRASTIS.

We described in our edition of 1888 the various therapeutic uses of this drug, and although many communications have since appeared upon it, they have served rather to confirm than to extend our knowledge of its remedial properties.

Dr. David Cerna[1] has made a very elaborate study of the effects produced by this drug, chiefly upon animals, using hydrastine for his experiments. These, which are recorded in great detail, result in the following conclusions : (1,) Hydrastine is poisonous to both cold and warm-blooded animals ; (2,) The minimum fatal dose of the drug in the

common frog (*R. esculenta*) is ·001 gramme for every thirty grammes of the animal's weight ; (3,) The minimum fatal dose of the alkaloid in the dog, by hypodermic injection, is ·50 gramme for every kilogramme of the body-weight ; (4,) Hydrastine destroys the irritability of the muscular tissue ; (5,) The alkaloid likewise destroys the excitability of the efferent or motor nerves ; (6,) Very large quantities produce loss of the functional activity of the efferent or sensory nerve-fibres, and also cause anæsthesia when locally applied ; (7,) Hydrastine, in small amounts, increases reflex activity by stimulating the spinal cord ; (8,) Later in the poisoning, by large quantities, hydrastine diminishes reflex action by stimulating at first Setschenow's centre in the medulla oblongata, and afterwards abolishes it by paralyzing the spinal cord ; (9,) The paralysis produced by the drug is due to an action upon the muscles, the motor nerves, and spinal cord ; (10,) The convulsions of hydrastine are of a spinal origin ; (11,) Hydrastine destroys the electro-excitability of the cardiac muscle ; (12,) The alkaloid, in small doses, produces a primary frequency in the pulse-rate, due probably to a stimulating action on the cardiac motor ganglia : (13,) In moderate and poisonous amounts it diminishes the number and increases the size of the cardiac beats by an action upon the intra-cardiac ganglia and the heart-muscle itself ; (14,) Hydrastine lowers arterial pressure by a direct action on the heart, and also through a paralyzing influence exercised upon the centric vaso-motor system ; (15,) The drug produces at first an increase, and afterwards a decrease, in the number of the respiratory movements ; (16,) Hydrastine kills by failure of the respiration ; (17) The alkaloid lowers bodily temperature ; (18,) The drug increases peristalsis ; (19,) In hydrastine-poisoning the salivary and the biliary secretions are largely increased, especially the latter ; (20,) Hydrastine locally applied produces at first contraction of the pupil ; afterwards dilatation of the same.

The author gives a very excellent *résumé* of the various conditions for which the drug has been employed, and it may be useful to summarize these, and also the results which we gave in our previous article.

Externally.—It is valuable for acute and chronic catarrhs, such as are found in **Acute Gonorrhœa, Ophthalmia, Otorrhœa, Leucorrhœa,** etc. Lotions consisting of a 10 per cent. solution of the muriate of hydrastinine, or of 10 to 30 drops of the liquid extract to 1 ounce of water are used, or in cases where the dry treatment is applicable, we employ 15 grains of hydrastinine to 1 ounce of sugar of milk.

Digestive System.—Hydrastis is useful for **Chronic Constipation** due to loss of muscular power in the lower bowel. Professor Bartholow

considers that torpor of the muscular layer of the intestine is not affected by it, but we think that the experiments above recorded justify the difference of opinion we expressed on this subject in 1888, and we are confirmed in it by repeated clinical experience.

For **Chronic Catarrhal Conditions of the Stomach** and duodenum and gall duct, it is of undoubted value; briefly it may be considered as a tonic to the mucous membrane in all parts of the body.

Uterine Disorders.—Professor Schatz's[2] views have been so amply confirmed since his lecture delivered in 1883, that it is only necessary to recall them. "In many particulars hydrastis and ergot are not unlike, but not infrequently hydrastis is efficient in cases of **Hæmorrhage** where ergot is powerless, or even of positive injury, as also in some cases of **Myoma.** . . . . In the non-gravid uterus the continuous administration of hydrastis causes a retardation of the menstrual period, with a diminution of the amount; it causes the pain to be less, even in **Menorrhagia** and **Dysmenorrhœa** of virgins, without any local causes, when pain is absent. Its action in myoma is often quite remarkable. Hæmorrhages caused in this manner diminish very much, or disappear entirely, after the use of hydrastis, even where Bombelin's ergotin has been employed most energetically."

Throat Diseases.—Felsenburg[3] obtained good results from its local application in **Chronic Pharyngitis.**

Cancer.—Many physicians claim to have cured scirrhus of the breast with this remedy. Careful observation on this subject will tend to show that without having any curative power over cancer it has the same specific relation to the connective tissue of the breast as it has to that of the uterus. It thus diminishes both pain and swelling, and retards the progress of disease. It should be used internally, and also as an external application.

Night-sweats.—It has been recently employed with success to check the **Night-sweats of Phthisis,** by Dr. Cruse[4], who gives 30 drops of the tincture at bed-time.

It has been used in **Bright's Disease,** and also in several forms of **Skin Disease,** but the information so far advanced is insufficient to enable us to come to any decided conclusions as to its action.

REFERENCES.—[1] "Therap. Gaz.," May and June, 1891; [2] "Arch. f. Gyn.," Heft 1 u. 2, Berlin, 1884; [3] "Wiener Med. Blätter," No. 48, 1888; [4] "Prov. Med. Journ.," Aug. 1, 1891.

HYDROGEN PEROXIDE.

Dr. Paul Gibier,[1] the Director of the Pasteur Institute at New York, has been making some valuable experiments on the destructive power of peroxide of hydrogen on bacilli. The solution of peroxide of

hydrogen used was a 3·2 per cent. solution, yielding fifteen times its volume of oxygen, but this strength was reduced to about 1·5 per cent., corresponding to about eight volumes of oxygen, by adding the fresh culture containing the microbe under experimental investigation. The most interesting experiment was the following : He mixed with sterilized water a small quantity of the medulla taken from a rabbit that had died of hydrophobia, and to this mixture added a small quantity of peroxide of hydrogen. Abundant effervesence took place ; and as soon as it ceased, having previously trephined a rabbit, he injected a large dose of the mixture under the dura mater. Slight effervesence immediately took place and lasted a few moments, but the animal was not more disturbed than when an injection of the ordinary virus was given. The rabbit was still alive two months after the inoculation. A second rabbit was inoculated with the same hydrophobic virus which had not been submitted to the action of the peroxide ; and this animal died at the expiration of the eleventh day with all the symptoms of hydrophobia. Dr. Gibier announces his intention of experimenting upon the bacillus tuberculosis in the same way.

Dr. John Aulde[2] gives an excellent *résumé* of the action and use of hydrogen dioxide, which may be consulted.

REFERENCES.—[1] "Medical News," vol. ii, Nov. 17, 1890 ; [2] "New York Med. Journ.," Dec. 27, 1890.

HYPNAL. (See "Chloral Antipyrin.")

IODOPHENACETIN.

This is produced when a cold saturated solution of phenacetin, acidulated with hydrochloric acid, is treated with iodine. It has been proposed as an **Antiseptic.**

Dr. Scholbein's experiments show that this substance possesses marked powers as a bactericide, but that when given subcutaneously it produces marked local irritation, and when given internally it forms combinations with the alkalies of the intestinal canal, and consequently from the readiness with which iodine is given up iodine-poisoning may readily follow the administration of even small doses.

REFERENCE.—"Vesterr. Zeitschrift für Pharmacie," June 10, 1891.

IODOSULPHATE OF CINCHONINE.

This substance is another of the many proposed substitutes for iodoform. It is an impalpable powder *without odour*, and colourless ; it is soluble in alcohol and chloroform, but not in water. It can be prepared by a chemist at a small price.

The sulphate of cinchonine is dissolved in water, 25 parts to 2,000 ;

it is then precipitated by a solution containing 10 parts of iodine, and 10 parts of iodide of potassium to 1000 parts of water.

It is well to carefully avoid adding this reagent in excess ; the solution should be allowed to retain a little sulphate of cinchonine. The voluminous precipitate formed by its addition may be collected on a filter, and washed until the washings no longer contain free iodine. In drying in the air the iodosulphate of cinchonine is obtained as a definite product, containing 50 per cent. of iodine, and may be obtained in a crystalline form.

The profession is indebted to M. Yvon for this substance, which appears likely to prove a very practical addition to our resources.

REFERENCE.—" Le Progrès Méd.," July 12, 1890.

KERATIN.

This is obtained by treating shavings of buffalo horns with ether, alcohol, and an acid. It is said to be insoluble in the contents of the stomach, but readily so in those of the intestine after the pancreatic juice has entered.

Drs. Unna and Beiersdorff suggest in consequence that pills and capsules should be coated with this substance when their contents are likely to irritate the mucous membrane of the stomach, or when we wish the remedy to act particularly upon the intestines, and especially for the use of vermicidal agents.

LOLIUM TEMULENTUM.

This is a grass commonly known as "darnel," which is sometimes found growing among wheat and other grains, and poisonous results have frequently followed its accidental use. Dr. P. Antze has obtained from its tincture a volatile alkaloid, which he terms "loliine," and an acid which he calls "temulentic acid." Experiments made with a solution of this acid with carbonate of sodium on frogs have shown that doses of from ½ to 1 grain possess marked influence on the activity of the heart, which becomes arhythmical and slow. On rabbits, after the administration of the extract, there is a great reduction of temperature, and finally depression below normal with disturbance of the appetite, dyspnœa, gasping, and staggering, the temperature finally being reduced to 97°. These results also appeared after the administration of temulentin, while after loliine has been given there is no reduction of temperature and no staggering. Post-mortem examination shows great emaciation, ecchymosis, and congestion of the gastric mucous membrane. Experiments by the author made upon himself resulted in disturbance of the sensorium and the production of gastric pain and vomiting with chills.

REFERENCE—" Centralblatt für die Gesammte Therapie," May, 1891.

MERCURY.

"*The Place of Mercury in Therapeutics*" forms the subject of two recent papers by Dr. E. P. Hurd.[1] Speaking of its action in syphilis, he asks the question, Why does mercury, the most powerful producer of spanæmia known, cure syphilitic anæmia? We are still able to give no better answer to this question than that given by Wilbouchewitz,—viz., that syphilis produces corpuscular disintegration and diminution; and mercury, by antagonizing this action, causes the globules to increase. In other words, syphilis being a microbe-disease, mercury destroys the specific microbe. It is still a choice between two evils, for mercury none the less acts as a corpuscular poison when given in syphilis; only the syphilitic agent more rapidly and more intensely spoils the blood and prostrates the vital energies, and mercury does a greater good than evil by staying the ravages of the baneful microbe.

In respect to the time when the use of mercury in **Syphilis** should be commenced, the Vienna school (Hebra, Zeissl, Sigmund), with Liebermeister, would wait for the full development of the secondary symptoms; while the Paris school, led by Fournier, and eminent German authorities (Kaposi, Neisser, Leube, Edlefsen, Bäumler, Weber), affirm the superiority of early treatment, which should be begun as soon as the infecting chancre is diagnosticated.

In America and in England both methods have their representatives, and the author contents himself with advising the practitioner never to treat a suspicious induration as a specific infecting lesion till he is sure that it is such.

The following is recommended as a convenient and much-employed formula in the treatment of syphilis:—

℞ Potass. Iodidi ʒj | Aquæ ʒxij
Hyd. Bichlorid. gr. vj |

Dose.—A teaspoonful three times a day.

As a rule, the patient is kept under the mild influence of this medicine for at least five months. Instead of this preparation, 1½ grains of the protiodide, in divided doses, may be given daily during the same length of time. Under this treatment the gums are seldom touched, and mercurial cachexia is for the most part avoided.

Referring to the use of mercury as an **Antiphlogistic,** Dr. Hurd says: "There seems to be no proof that calomel, when given in minute doses, whether to oppose the formation and organization of plastic exudations, or to stimulate the secernent organs and promote elimination, or to arouse the absorbents to greater activity in removing inflammatory products, ever serves any really good antiphlogistic

purpose. It does, doubtless, perturb the nutritive processes and deglobulize the blood; it may even render the blood 'aplastic.' Whether, however, this be a good thing in an inflammatory disease, and with all the evil that is inflicted on the constitution of the blood, is not proved. Nor can we even invoke the help of the known microbicide properties of the mercurial, for there is no evidence that calomel, when given internally in fractional doses, has any such microbicide action.

"It is true that calomel is still much given in **Meningitis,** whether simple or tuberculous, small doses ($\frac{1}{4}$ to 1 grain) being administered every hour or two. It cannot be shown that this treatment has ever done any good. The success which has been claimed for it is doubtless attributable, as Dujardin-Beaumetz remarks, to faulty diagnosis—*i.e.*, it is probable that the meningitis was of syphilitic rather than of tuberculous nature.

"Many give calomel in meningitis because they are expected to give something, and, on account of the vomiting, nothing else is likely to stay down. Besides, who shall have the hardihood to gainsay the authorities who have advised it?"

The action of calomel as a purgative and gastric sedative, both in the gastric catarrh of infancy and acute indigestion, is highly esteemed by the author. He says: "In **Cholera Infantum,** with constant vomiting and frequent watery stools, I have known minute doses ($\frac{1}{10}$ grain) of calomel, rubbed up with prepared chalk, to be well borne by the stomach and apparently to stay vomiting. Yet calomel is not a remedy on which I would much rely, and I place much more confidence in small pieces of ice, brandy, ice-cold applications if the fever be intense, pancreatized milk, starch and laudanum injections, etc."

In **Chronic Enteritis** the occasional administration of a calomel purge has proved of great benefit, and the chronic diarrhœa of adults, independent of serious organic change, with watery, pale stools, often yields, according to Ringer, to $\frac{1}{100}$ grain of corrosive sublimate every two or three hours.

Speaking of the **Cholagogue** properties, he gives a quotation from Budd,[2] which is worth repeating: "The frequent use of mercurials in functional hepatic complaints may lead to much mischief. When the liver has become accustomed to the stimulus of mercury, no other medicine will sufficiently excite its action. The person is thus led to the habitual use of the medicine, and after a time the constitution is undermined by it. It increases the activity of the liver at first, but seems to leave it weaker than before, and, if frequently

resorted to, the nutrition of the patient, impaired by the original disease, is still further impaired by the drug."

In all such cases we should be content with milder medicines which increase the secretion of the liver without having any permanent deleterious effect on the system.

Chambers, who prefers the *pil aloes et myrrhæ* as an alterative to any mercurial, uses this emphatic language in his work on "Indigestions," page 49: "I am particular in enlarging upon this point from the fear lest any language of mine should be construed as an encouragement to an unfortunate tendency towards commencing treatment habitually with destructive remedies. Some call this clearing the decks for action; in a majority of instances they may be said to throw overboard much of the best tackling on the ship and loosen her armour-plates. A so-called sluggishness of the liver is a frequent pretext. In a half-nourished person (and all invalids are but half nourished) the fæces are apt to be light coloured and scanty. Blue pill gives them immediately a darker hue and increases their quantity, but sadly at the cost of the patient's strength, while the temporary change soon passes off. But let the experimenter try meat and iron, and see if he cannot produce the same result."

The author concludes that in ordinary "bilious" complaints calomel has a place which is entirely subordinate to other more rational and hygienic modes of treatment.

Dr. Rudolph Winternitz,[3] as the result of some investigations as to the excretion of mercury in relation to the various methods of its employment, concludes that as regards the excretion by the urine, the method of interstitial injection was far beyond all others. After the injection of insoluble salts of mercury, as much as four to eight milligrammes per day were found in some cases. He could not determine whether the symptoms of intoxication went parallel with a diminution in the excretion of the drug. Increased excretion of mercury was not effected by iodide of potassium in doses of even 2 to 3 grammes. No difference as regards excretion by the urine was observed between the insoluble salts, calomel, salicylate of mercury, and the soluble preparations. A parallelism between the quantity introduced and the curative effect was shown by the quantity excreted, whether the mode of administration was by the mouth, subcutaneous injection or local epidermic inunction, or plaster.

Dr. L. Böhn,[4] in his study of the absorption and excretion of mercury when given in the form of salicylate, finds that the absorption of mercuric salicylate is incomplete, but that this absorption is more marked, and probably greater than that of calomel in non-poisonous doses.

M. Adam[5] has studied the action of alkaline chlorides on calomel. He states in the absence of air, even in the presence of organic matter, the change effected is so slight as to be practically *nil*, and, unless calomel is prescribed on an empty stomach, it is of no consequence whether the food taken is salted or not ; he also concludes that chloride of sodium is not incompatible with calomel.

Hydrargyri Iodidum Viride.—On account of its instability this salt has been expunged from both the last British and German Pharmacopœias, but Messrs. Wm. Martindale[6] and W. A. Salter[6] consider that as it is very highly valued by a great number of practitioners the stigma is hardly deserved. They admit that the manufactured article is not pure, that it contains free mercury, but they urge that if the preparations were again made official this could be recognized, as is done in regard to several of the unstable preparations of iron. But they hold that a green iodide of mercury can be so prepared, and with reasonable care it can be kept sufficiently stable and uniform in appearance for use in medicine. It is green, and if kept excluded from light or in amber tinted bottles it is evergreen, and may be prepared free from all but a trace of mercuric iodide. Estimated as above, it should yield iodide of silver equal in amount to not less than 60 per cent. of the weight taken.

They quote letters from Mr. Buckston Browne and Mr. Campbell Williams which affirm that the green iodide is to be preferred to the red as being less irritating. The authors give some hints as to dispensing and dosage. Pills are recommended containing $\frac{1}{6}$ grain in each, 1, 2, or 3 to be taken three times a day, running up and down the scale as the patient requires the medicament. It is best massed into pills with sugar of milk, syrup and gum. The pills should be of a sap-green colour, which may be taken as a test of their quality. They may be coated with sandarach solution, and should be sent out in amber tinted bottles.

The dose of 1 to 3 grains given in the last B. P. they consider much too large, $\frac{1}{6}$ to $\frac{1}{2}$ a grain being the dose usually prescribed.

Hydrarg. Thymolo-aceticum.—Dr. Tranjen[7] has been using 3 parts of this drug to 40 parts of liquid paraffin injected into the muscles once a week, as a remedy for phthisis.

The case in which the drug was first suggested and employed was that of a young woman with unmistakable tuberculosis of the lung, whose husband had died with brain syphilis. The results were so gratifying that the author adopted the treatment in a number of other cases of phthisis. In all there was a diminution in the number of bacilli, together with great improvement in the general health of the

patients. From quite extended observations with this drug the author feels satisfied that it has a contra-tubercular action, and asks that it be given a fair trial.

Incompatibility of Mercury and Cocaine.—Herr Brunner[8] has called attention to the incompatibility of some preparations for outward application, in which a cocaine salt is ordered in conjunction with a mercurial compound. An ointment of mercuric oxide and cocaine hydrochloride, for instance, is ordered in ophthalmic practice, but after being kept for a time the anodyne effect of the ointment gives place to a pronounced caustic action, due to the conversion of mercuric oxide into oxychloride. An ointment of cocaine hydrochloride, silver nitrate, and vaseline, sometimes ordered as a dressing for wounds, is also liable to undergo alteration through formation of silver chloride, but it is pointed out that this change can be retarded by thoroughly mixing the solution of silver nitrate with the vaseline before adding the cocaine hydrochloride.

Bin-iodide of Mercury in Scarlet Fever and Diphtheria.—Since Dr. C. R. Illingworth recommended this drug, on account of its germicidal potency as a remedy for scarlet fever and diphtheria, considerable difference of opinion has arisen as to its efficacy.

Dr. Clement Duke[9] considers that in scarlatina it averts the fever and prevents the desquamation of the skin. Drs. Gabb,[10] Sexton, Purdy and Mayo also record satisfactory results. Dr. Lennox Browne[11] advises its use in the graver form of diphtheria in conjunction with bark. Drs. Jacob, Rumboll, Swann and Hick did not obtain favourable results, and its trial at the London Fever Hospital did not prove satisfactory.

Dr. Illingworth considers it possible that his directions were not properly carried out in these cases. His method is to employ locally as a paint a 1 in 500 solution three times daily. To give internally sol. hyd. bin-iod. (1 in 1000) ℥vj, water to ℥vj; of this a tablespoonful is given every two hours until the temperature falls. He also prescribes the drug in powders containing $\frac{1}{16}$ gr.

As regards the theory upon which this drug is employed, if its germicidal properties are to be obtained it is obviously necessary to add a sufficient quantity to the blood to enable it to exercise these effects. To do this is to add a new danger to a disease like scarlatina, which has but slight danger in itself.

But it may, nevertheless, be possible that favourable results may follow its use even when doses too small to act as a germicide are given. As a matter of fact, it received an extensive trial in both these diseases before the germicidal theory had been introduced. Dr

Hughes, in his "Pharmacodynamics" (edit. 1869), speaks of the encouraging results previously obtained with both the prot-iodide and bin-iodide of mercury in diphtheria, but confesses that his own experience was less satisfactory. Dr. Hale, in his "New Remedies" (1867), comparing the action of phytolacca with hyd. bin-iod. in diphtheria, gives the preference to the former drug in non-malignant cases, but states that he uses the bin-iodide of mercury in those cases in which the peculiar fœtor of the breath points to malignancy.

Dr. Hughes considers that in the scarlatinal sore-throat the use of mercury (in small doses) is strongly indicated, "especially when anything like the cynanche maligna or putrid sore-throat of the old writers is present." We have tested these indications practically during the past ten years, and consider them reliable. The drug appears to have a specific action in certain forms of **Inflammation of the Tonsils,** rather than upon the disease which excites such inflammation.

REFERENCES.—[1] "Therap. Gaz.," January and April, 1891 ; [2] "On Diseases of the Liver," 1846 ; [3] "Arch. f. Dermat. und Syph ;" [4] "Hoppe-Seyler's Zeitschr. f. Physiol. Chemie.," Nov. 1890 ; [5] "Lancet," October 18, 1890 ; [6] "Pharm. Journ.," Sept. 27, 1890 ; [7] "Berlin. Klin. Woch." ; [8] "Apot. Zeit.," Feb. 11, p. 86 ; "Pharm. Journ. and Transactions," Feb. 28, 1891 ; [9] "Brit. Med. Journ.," July 9, 1887 ; [10] "Brit. Med. Journ.," July 21, 1888 ; [11] "Brit. Med. Journ.," Aug. 1, 1891.

METHYL VIOLET.

There appears to be an unaccountable desire to employ the aniline dyes as **Antiseptics** for external and internal use. That they are practically non-poisonous and free from odour is in their favour, but that they are powerful dyes which will stain every tissue and material with which they may come in contact should point to the necessity of their being shown to be of decidedly greater value than the multitudinous antiseptics we have at our command before they can be recommended for practical use. The papers so far published have given very little proof of this.

Dr. Stevenson[1] gives a condensed translation of Professor Stilling's paper, in which it is claimed that since one can inject relatively large quantities into the peritoneal and pleural cavities without injury, and as animals can eat also, without toxic effects, large quantities of the dye, so also is its further application conceivable, and the methyl violet treatment of purulent pleurisy and peritonitis, typhoid and dysenteric ulcers, etc., is not beyond the bounds of possibility.

Dr. G. Masini[2] has also made some experiments, which he admits

prove little or nothing as to the curative power of methyl-violet in pulmonary tuberculosis, but he hopes they may serve "as a guide to future investigation."

MM. Hugouneucq and Eraud[3] have made similar experiments. They state that in **Gonorrhœa** excellent results are obtained by the injection of 1 in 100 and 1 in 150 solutions from ten to fifteen times a day. If only three or four injections are given in the day neither the character nor the duration of the discharge is influenced in any way.

M. Quenn[4] employed subcutaneous injections in two cases of **Malignant Disease** and in two of **Tuberculosis** without any good result. He concludes that the methyl colours are not diffusible, and that this is an argument against their use.

REFERENCES.—[1] "Lancet," Nov. 8, 1890; [2] "Gazzetta degli Ospitali," March 11, 1891; [3] "Rev. de Thér. Méd. Chir.," March 15, 1891; [4] "La Semaine Méd.," May 13, 1891.

NICKEL-CARBONYL.

This is a new substance obtained by Drs. Mond, Lang, and Quincke by passing a stream of carbonic oxide over finely divided nickel, resulting from the reduction of the oxide of nickel by hydrogen. Its formula is $Ni(CO)_4$. This liquid is volatile at about 40° C., while its vapour detonates and undergoes spontaneous combustion. These authors reported at the meeting of the Société de Biologie, held March 21, 1890, that they had injected 5 minims of nickel-carbonyl into the veins of a dog with the production of death one hour later. In larger doses it produces instantaneous death. Instilled into the eye it acted as a caustic, but without producing immediate death, as it seemed to be only with difficulty absorbed. Nickel-carbonyl is difficult to handle, not on account of possible explosions, which are without practical danger, and are by no means violent, but because its vapours produce the most excruciating headache. It acts by displacing oxygen from hæmoglobin. It remains, however, to be determined whether the combination which it forms with hæmoglobin is a combination in which the oxide of carbonyl is alone interested, or as to whether one is formed in which the molecular group of nickel-carbonyl enters in its entirety.

REFERENCES. — "Répertoire de Pharmacie," April 10, 1891; "Therapeutic Gazette," May 15, 1891.

OIL.

M. Burlureaux communicated to the French Society of Dermatology in March and April, 1891, that simple or medicated oil might be injected daily, hypodermically, with tolerance, the oil being well

borne and digested *in situ*. M. Besnier[1] has continued these experiments, and found them usually safe and beneficial, having used oil with creasote, the oil being rendered strictly aseptic. The doses injected daily were from 50 to 100 grammes. Under the influence of these injections **Lupus** is observed to become moderately congested, and the cicatrization of open tuberculous sores to be hastened.

M. Besnier publishes a case in which alarming symptoms followed the injection of 40 to 60 grammes of oil daily, but as this contained 2 to 4 grammes of creasote, it does not appear to be evidence of danger in using pure oil by hypodermic injection.

In reference to the use of oil in hypodermic injections as a solvent for certain remedies, the following directions have been given[2]:—

Preparation of the Solutions.—This is either made by simply mixing the ingredients, if liquid, or by producing solution by means of a water-bath, in which latter case the most volatile substance must be added after the others have become liquid.

Sterilization of the Solutions.—The liquid is placed in a sterilizing flask. (Pasteur's retort or Chamberland's pipette-flask is mentioned by the author. Any bottle with long and narrow neck, which may be stoppered with a pellet of cotton, may be used.) The flask is then heated in a sterilizing oven at a temperature of 120°.

Filling into Bottles.—The liquid is now transferred, under proper precautions, into previously sterilized small bottles. If a Chamberland's flask is used, which has a bent neck and is drawn out to a fine tube fused at the end, the latter is broken off after sterilization is completed, the tube pushed through the cotton stoppers of the small bottles, and the liquid thus transferred without risk of reintroducing germs or bacteria.

Formulæ.—The most usually employed preparations, which are particularly used in **Phthisis**, are the following :—

Picot's Solution.

℞ Guaiacol	75 grains	Olive Oil	
Iodoform	15 grains	Liq. Vaseline, āā eq. pts to make	$3\frac{1}{2}$ fl. oz.

Pignol's Solution.

℞ Eucalyptol	216 grains	Iodoform	15 grains
Guaiacol	75 grains	Olive (or Almond Oil), to make	$3\frac{1}{2}$ fl. oz.

Morel-Lavallée's Solution.

℞ Eucalyptol	185 grains	Iodoform	60 grains
Guaiacol	75 grains	Olive Oil, to make	$3\frac{1}{2}$ fl. oz.

The hypodermic dose of these solutions is from 50 to 210 minims in twenty-four hours. Besides the above, there are also in use plain

solutions, in olive or almond oil, of creasote (1 to 15), eucalyptol (2 or 4 to 10), etc.

REFERENCES.—[1] "Annales de Derm. et de Syph.," No. 6, June, 1891; [2] "American Druggist," June 15, 1891.

OREXIN.

We gave a reference to this remedy (which is a derivative of the compound known as Chinazoline) in our last issue.[1] It was introduced as a pure stomachic tonic, but the experience of several observers gave the impression that it was capable of producing some very unpleasant symptoms.

Dr. A. Donner[2] gives an elaborate account of its chemical composition and reactions. Dr. John Gordon[3] describes several cases of **Tubercular Disease,** in which loss of appetite was a marked feature, in which he has employed it. The dose consisted of $\frac{1}{8}$ to $\frac{1}{4}$ of a grain given three times a day, and dissolved in water. He found that under its use the tongue became less furred and the constipation was relieved, and he has been led to regard it as a valuable stimulant in such cases.

REFERENCES.—[1] "Med. Ann.," 1891, p. 44; [2] "Pharm. Zeit.," July 5, 1890; "Pharm. Journ.," July 19, 1890; [3] "Lancet," July 11, 1891.

PAMBOTANO.

This is the native name of a small tree, the *Calliandra Houstoni* (Baillon), growing in Mexico. In 1889 Dr. J. Valude brought the plant to the attention of the Paris Academy of Medicine as a remedy for **Malarial Poisoning,** and a report to that body on the subject admitted its apparent value. Recently Dr. A. E. Roussel, of Philadelphia, read a paper before the Philadelphia County Medical Society in which, after giving a summary of the experience recorded by several foreign physicians, who used a decoction and an alcoholic elixir, he presented brief accounts of eight cases in which he had used the drug. His results had been "decidedly encouraging," but "hardly as satisfactory as some of the reports from abroad." The preparation he used was obtained from Paris.

REFERENCE.—"New York Med. Journ.," July 11, 1891.

PARA-CRESOTIC ACID.

This, it will be remembered, is an impurity found in artificially prepared salicylic acid, and to which some of its toxic effects are ascribed. Dr. M. Charteris, Professor of Therapeutics, Glasgow University, has made a careful examination of its chemical and physiological qualities, which have enabled him to state positively that in cases where poisonous symptoms have been evoked by the

administration of large and repeated doses of the artificial salicylate of sodium in rheumatism, they are dependent upon its containing the impurities mentioned. Further experiments may be necessary to determine whether the amount of para-cresotic acid contained in some samples of commercial salicylic acid is sufficient to produce poisonous effects on a human subject. His experiments show that when injected into small animals it is poisonous, though in a less degree than the ortho-acid, and that its poisonous effects are intensified when combined with the ortho-acid, and still more so when incorporated with this acid and salicylic acid.

REFERENCE.—"Brit. Med. Journ.," March 28, 1891.

PENNYROYAL (Mentha Pulegium).

In respect to the physiological action of this drug, Dr. L. Falk finds that after either administration by the mouth or subcutaneous injections of from 7½ to 40 drops marked inco-ordination was developed, followed by paralysis of central origin and finally by death. The urine was diminished in quantity, and contained tube-casts and albumen, together with leucine and tyrosine.

Post-mortem examination revealed fatty degeneration of the liver and heart, and to a less degree of the kidneys. In most cases blood-pressure was slightly increased, and the pulse slowed; the slowing of pulse being attributable in great part to central stimulation of the pneumogastrics and slightly to peripheral stimulation of these nerves. Fatty degeneration of the abdominal organs and of the heart followed after prolonged administration of the oil in doses of $\frac{1}{16}$ drop daily.

REFERENCE.—"Les Nouveaux Remèdes," Dec. 8, 1890.

PHENOCOLL (Hydro-chlorate of).

This is a hydrochloric acid salt of amido-acet-para-phenetidin with the composition $C_6H_4\begin{cases}OC_2H_5\\NH—OC.CH_2—NH_2\end{cases}$, a base which occurs through dehydration of glycocoll. The new compound is, therefore, a phenacetin. The hydrochlorate of phenocoll is soluble in about 16 parts of lukewarm water. The base, while readily soluble in hot water, is almost insoluble in cold water; it is also readily soluble in alcohol, while it is only slightly soluble in ether, benzol, and chloroform. The base is only with difficulty acted on by weak alkalies and acids; concentrated acids or alkalies split the base up into phenetidin and glycocoll.

On the authority of Professor Kobert, this substance is stated to be practically non-toxic to animals, and exercises no hurtful influence on the blood, a point of marked contrast to most of the antipyretics.

Professor von Mering has also found that 28 grains given to a rabbit

produce no toxic symptoms, while doses of 15 grains in cases of pneumonia and typhoid fever were able to reduce the temperature 2° C. without collapse or cyanosis. 15 grains of phenocoll, as far as the action on the temperature is concerned, are stated to be about equal to 30 grains of antipyrin and about 12 or 15 grains of phenacetin.

Dr. Hertel publishes notes of several cases in the clinic of Professor Gerhardt, in which phenocoll was administered in watery solution, in doses of from 7½ to 15 grains, as an **Antipyretic** and **Anti-rheumatic**, the results seeming to show that single doses of 7½ grains reduce the temperature within about an hour on an average of about ½°, while a dose of 7½ grains, given for three successive hours, usually reduces the temperature about 1°, the reduction in temperature only, however, being of short duration. Single doses of 15 grains produced a fall of temperature of 1° to 1½° C. in one or two hours. With 75 grains given in divided doses in twenty-four hours, in the majority of cases the highest febrile temperatures may be reduced to normal. No chills, sweating, or collapse were noted. In three or four cases of acute articular rheumatism, even after antipyrin, salicylate of sodium, and phenacetin had failed to produce relief, 75 grains of phenocoll, in divided doses, given in twenty-four hours, are said to have relieved the pain in the affected joints, but without influence on the temperature.

The remedy is said to have no hurtful action on the kidneys, although, after 75 grains have been administered, the urine becomes dark-brown.

The editor of the "Therapeutic Gazette" concludes the article, giving us the above particulars, as follows: "No statement is made as to whether this substance is a proprietary remedy or not; but, considering its source, it is pretty safe to assume that it is either patented or trade-marked."

REFERENCES.—[1] "Deutsche Medicinische Wochenschrift," Ap. 9; 1891; [2] "Therap. Gaz.," June 15, 1891.

PHENYL-URETHAN (Euphorin).

We referred to this aniline derivative in our last issue. More recent reports do not encourage us to believe that it will be found to have any advantage over the antipyretics and analgesic remedies in use.

Dr. Adler[1] used it in twenty-four cases: three supraorbital neuralgia, one chronic cephalalgia, three sciatica, three acute polyarthritis, nine chronic articular rheumatism, three muscular rheumatism, and two cases of cephalalgia during the reaction stage of injection with Koch's lymph. It was also used in six cases of habitual hemicrania with

"wonderful" effect. The supraorbital neuralgia, the muscular rheumatism, and the sciatica cases were all quickly cured; the others were mostly much improved. The dose given was 6 grains three to five times daily. No unpleasant symptoms were ever observed. In two cases of pulmonary tuberculosis it acted satisfactorily as an antipyretic, reducing the temperature in about half-an-hour.

The following paper by Dr. Sansoni[2] may be referred to.

REFERENCES.—[1] "Wien. Med. Woch," April 25, 1891; [2] "Therap. Monat." Sept. 1890; "Therap. Gaz.," Nov. 15, 1890.

PIPERAZIDINE.

This compound, which appears to be closely allied to spermine (which see) occurs as a white crystalline powder. It is said to be capable of dissolving twelve times as much uric acid as an equal quantity of lithium carbonate. It is also non-poisonous.

M. Vogt[1] gives 15 grains three times a day, and claims that at the end of three days the quantity of uric acid in the urine is diminished, and continues so for five or six days after cessation of treatment. That it has a direct solvent action on uric acid crystals can be demonstrated in the test tube, but when employed in **Gout** it would appear from M. Vogt's statements that it exercises an oxidizing, rather than a solvent action, when given internally.

REFERENCES.—[1] "La Semaine Médicale," March 11, 1891.

PROTOPINE.

This alkaloid has been isolated from opium, from chelidonium majus and macleya cordata, which belong to the order of papaveraceæ. Dr. Ergel has recently made some experiments with a view to the investigation of its physiological properties. His conclusions are as follows: (1,) In small doses protopine exercises on the frog narcotic effects similar to those produced by other opium alkaloids; (2,) In large doses it produces a paralyzing action on the muscular substance, and on the terminal ramifications of the peripheral nerves; (3,) With small or moderate doses reflex action is not abolished, although this occurs when large doses are given; (4,) Protopine produces toxic effects in mammals comparable to those produced by camphor, death being produced by a paralysis of the respiratory centre.

REFERENCES.—"Archiv. f. exp. Pathologie," Bd. xxvii., Heft 6, 1890; "Gazette Médicale de Paris," Oct. 11, 1890.

QUININE.

We mention this drug only in reference to the question as to the best mode of administering it hypodermically when its immediate action is required. The "Therapeutic Gazette," in a leading article

on this subject, ranks the preparations suitable for this purpose in the following order: (1,) Hydrochlorate of quinine and urea; (2,) Bisulphate; (3,) Hydrobromate; (4,) Hydrochlorate; and (5,) The sulphate.

The *Hydrochlorate of Quinine and Urea* is formed by combining 20 parts of muriate of quinine, 12 parts of muriatic acid, and 3 parts of urea, and is soluble in equal parts of cold water. It represents 61 per cent. of quinine, and is usually employed in a 50 per cent. solution.

The *Bisulphate* contains about 60 per cent. of quinine, or 14 per cent. less than the sulphate, and is soluble in 10 parts of cold water, and very soluble in boiling water.

The *Hydrobromate* is nearly of the same strength as the bisulphate. It is soluble in 16 parts of water, or in equal parts of boiling water.

The *Hydrochlorate* is also soluble in equal parts of boiling water. Köbner uses it in a solution with glycerin, but without acid, giving from 1¼ to 3¾ grains at each injection.

The *Sulphate* requires 740 parts of cold water, or 30 parts of boiling water to dissolve it, or the addition of a large amount of acid,—say a drop of dilute sulphuric acid for each grain of the salt. This is naturally an irritating solution, and an abscess is the frequent result if it is employed.

REFERENCE.—"Therapeutic Gazette," Jan. 15, 1891.

RANDIA DUMENTORUM.

Sir James Sawyer has been using an ethereal tincture of this drug (1 part to 5 of spirit of ether) as a **Nervine Antispasmodic** and **Cardiac Stimulant.** The active principle of the drug is said to be allied to saponin, the glucoside found in soap, bark, and senega.

REFERENCE.—"Lancet," vol. i., p. 656, 1891.

RETINOL.

This is a distillation product of pine or fir resin. When pure, it is simply a hydrocarbon of the formula $C_{32}H_{22}$, in the form of a viscid fluid, similar to castor oil, with a peculiar odour, and a specific gravity of ·900; it boils at 238° C.

The value of retinol as a solvent was discussed at the Société de Médecin Pratique, on January 15, 1891. Dr. Vigier presented a number of preparations in which phosphorus, salol, and creasote were dissolved in retinol, and he laid great stress on its value as a solvent for phosphorus. Being unoxidizable, it is admirably suited as a vehicle, and such a solution remains unchanged indefinitely. So, also, a fragment of phosphorus, if ignited and then plunged into

retinol, is instantly extinguished. Dr. Vigier also mentioned the fact that retinol readily dissolves naphthol, aristol, iodol, codeine, camphor, cocaine, and strychnine.

REFERENCE.—"Le Progrès Mèdical," Jan. 24, 1891.

RHUBARB.

That rhubarb is capable sometimes of producing a severe eruption of the skin with febrile symptoms, was shown by Goldenberg.[1] In the case recorded by him, the face of the patient was covered with brownish-red irregular pustules about the size of a pea to that of a bean, and deeply infiltrated at the bases. There were a good many crusts, on removing which a moist, bleeding, fungoid surface was left. It was also present on both surfaces of the hands. The whole disappeared in a few weeks without treatment, leaving bluish pigmentation, but no cicatrices. It closely resembled **Pemphigus.** There was no fever, and the general health was excellent. Goldenberg administered rhubarb to the man on two subsequent occasions, and each time a similar eruption appeared.

M. Litten[2] records a similar case where the patient, who had previously shown an idiosyncracy as regards rhubarb, was affected in the following manner after the use of the infusion of rhubarb. His face was very much swollen and covered with scabs, mixed with abundant sanguineous and purulent exudation. The scalp, beard, eyelids, and lips were all involved. On further examination, the whole body was found to be covered with a polymorphous eruption, which, however, presented two special types, namely, **Hæmorrhagic Eruptions** and **Pustules.** The hæmorrhages were scattered all over the body, and varied from the size of a bean to that of a small plate, the colour being of all shades between bright blood-red and brown. The pustules were also scattered plentifully over the whole body, and resembled those of pemphigus. In some places the individual pustules had become confluent and covered large areas. On the dorsum of the hands the blebs were filled with clear fluid, which had not gone on to pus formation. Removal of the scabs left shallow dirty-looking ulcers. The lymphatic glands were swollen and painful. Similar eruptions were present on the mucous membrane of the eyes, nose, lips, mouth, and throat, accompanied with great swelling. The tongue was also much affected, and this, together with the general condition of the mouth, prevented proper articulation. Blood was frequently passed from the urethra, but sometimes the urine was wholly free from it. The temperature was 103°3 F. The patient felt strong and well, and complained only of the eruption. The urine contained neither albumen nor sugar, but was of a deep brownish-

yellow colour, and on adding solution of caustic soda, became deep purple-red.

The attack commenced with rigors and pains in the limbs, and then the face, lips, and tongue began to swell, the eruption being fully developed next morning. A dose of rhubarb being subsequently administered by Litten, produced the same result, but curiously enough chrysophanic acid had no effect.

REFERENCES.—[1] "New York Med. Journ.," Dec., 1889; [2] "Therapeut. Monatshefte," Dec., 1890.

SALICYLBROMANILIDE (Salbromalide).

This is a proprietary medicine, to which the name "Antinervine" has been given. It is a combination of bromacetanilide and salicylanilide, and is supposed to possess the properties of antifebrin, bromide, and salicylic acid, without their unpleasant effects, and may consequently be supposed to have antipyretic, antineuralgic, and antinervine properties. It is a white, crystalline powder, having a rather pleasant, slightly acid taste, feebly soluble in cold water, but dissolves freely in hot water, alcohol, and ether.

From the experiments conducted by Dr. C. S. Bradfute[1] at the Jepherson Medical College, this drug was shown to be a depressor both of the nervous and circulatory systems. The author considers it to be particularly adapted for those functional disturbances of the circulation which are the result of reflex impressions or too active stimulation. He also considers that it would prove useful for inflammatory conditions of a sthenic type. The dose recommended is from 3 to 10 grains, which may be given in the form of tabloids.

REFERENCES.—[1] "Cincinnati Med. News," June, 1891; "Therap. Gaz.," Aug. 15, 1891.

SALINAPHTHOL.

This has been proposed as a remedy for **Acute Articular Rheumatism.** It is a combination of salicylic acid with naphthol, is without odour or taste, and insoluble in water. The dose is from 4 to 7 grains given four times daily. It is claimed to produce neither headache nor toxic symptoms, but at present it does not appear to have been very extensively employed.

REFERENCE.—"Journ. de Médecine de Paris," Nov. 16, 1890.

SALIPYRIN.

This is the product which results when antipyrin and salicylic acid are dissolved together (100 parts of antipyrin to 73·4 of salicylic acid).

Dr. Scholvein suggests, as a simpler method of preparing the compound, that the components be heated together in molecular propor-

tions, and the resulting crust be dissolved in and crystallized from alcohol. It may also be obtained by shaking together an aqueous solution of antipyrin and an ethereal solution of salicylic acid, when the compound separates out in handsome crystals.

REFERENCE.—"Druggists' Cir. and Chem. Gaz." Aug., 1890.

SAMBUCUS NIGRA.

That the elder possesses diuretic properties is one of the most ancient traditions of our Materia Medica. But it is so long since it has been employed that it now comes before us as a new remedy.

Dr. Combemale made some experiments with the bark of the elder in 1889, showing it to possess **Diuretic** action when given in the form of a decoction to dogs and guinea pigs. The inner bark contains a volatile principle, and likewise, when administered in the form of a decoction, produces diuresis in doses of a drachm for every two pounds of body-weight, while the temperature at first is increased and then gradually descends below normal, the pulse likewise being retarded. If the volatile principle of the elder be not displaced, as in the production of a decoction, and a maceration of the elder bark be employed, it would seem that the volatile principle interferes to a certain extent with the production of diuresis, and then nausea and vomiting frequently follow its ingestion, with abundant diarrhœa, the temperature being reduced and the pulse likewise retarded.

Dr. Lémoine[1] has employed a decoction made in the following manner. A large handful of the fresh inner bark was placed in a quart and a half of water, which was then boiled down to about a quart. This was then sweetened with sugar and aromatized with mint, and was administered to the patient in about twenty-four hours, a new decoction being made each day. Dr. Lémoine states that he has never observed any vomiting following the employment of elder-bark, nor has he ever seen it produce sweating, one of the properties which was attributed by the ancients to elder, while with but few exceptions there was in all cases marked diuresis, followed within two or three days by liquid stools.

He concludes that the elder so employed as a diuretic is of the utmost value, and may yield the most valuable services in the treatment of **Ascites** and **Anasarca,** consecutive to diseases of the heart and kidneys. Under its use he has seen the quantity of urine increased nearly eight-fold, and this large amount maintained almost as long as the remedy was being administered. So also when its effects commence to decline, the diarrhœa also, which assists in the reduction of ascites, likewise diminishes. Dr. Lémoine principally employed the elder in nephritis, especially in the acute congestive form; its action

then being more rapidly produced than in chronic Bright's disease. It is said to be entirely innocuous, and is, therefore, preferable to cardiac remedies. It would seem to act solely on the kidneys, for Dr. Lémoine states that it in no way modifies the activity of the heart or the circulation, and would thus seem to be a simple diuretic producing filtration of the urine by an irritation of the renal epithelium. Nevertheless, he states that this action is accompanied by no unfavourable changes in the character of the renal cells, for after having given it for more than a week to a guinea-pig microscopic examination of the kidneys showed no organic change. So also in the case of an ovarian cyst, the abdominal ascites was reduced under its employment, and returned after its administration was stopped.

REFERENCES.—[1] "Gazette Médicale de Paris," No. 24, 1890; [2] "Therapeutic Gazette," Sept. 15, 1890.

SILICA (Salts of).

Dr. Bonjean has employed silicate of potassium in various vesical troubles. He states that silicate of sodium **Dissolves Uric Acid** with the greatest readiness, causing the elimination of a limpid, colourless urine, and in that it thus assists in the elimination of uric acid it may prove of value in diseases where uric acid predominates. The administration of these salts, such as the silicate of sodium, in doses of 7½ grains, renders the urine alkaline, without interfering with the elimination of uric acid.

It has been used with more or less success in cases of **Gout, Gravel,** and **Chronic Rheumatism.** So also as a local application, the solution of the silicate of sodium prevents the decomposition of pus, and thus is well suited as an application to putrid wounds, etc.

Dr. M. Sée has likewise used injections of silicate of sodium in **Gonorrhœa,** and maintains that its effects are most satisfactory, as is also the case when it is used locally as an application to venereal ulcers.

We have previously mentioned the value of silicate of soda as a remedy for **Chronic Enlargement of the Lymphatic Glands.** Since we introduced this remedy to the profession, some preparations which have been supplied by druggists as specially pure have proved to be inert, and it has more than once happened that the salicylate of soda has been dispensed in mistake for it. We prescribed the commercial solution of silicate of soda, which is not a pure preparation, because it contains a certain quantity of free hydrate of soda. This prevents the silicic acid from being deposited when it is exposed to the acids of the intestinal canal, and is therefore better for therapeutical purposes than the pure salt. In order to avoid mistakes on the part of the

dispenser, we prescribe it under the name of "silica solubilis." The dose is 5 to 15 drops, and is preferably given in milk.

REFERENCE. —"La France Mèdicale," June, 1891; "Medical Annual," 1889, p. 65.

SOMNAL.

This is formed by the union of chloral, alcohol and urethane, but Dr. Gilman Thompson[1] tells us that it is not a simple mixture, but a "complex body," a statement which would equally apply to most of our prescriptions. Its physical characters have been described by Dr. Frank Woodbury[2] as follows: "A colourless liquid, resembling chloroform in its appearance and behaviour when added to cold water, in which it forms globules and refuses to mix or dissolve. When shaken with water, the mixture is milky, but quickly separates. It is soluble in hot water and alcoholic solutions, and dissolves resinous substances and fats. The odour is faint, not very penetrating or disagreeable, and resembling that of the spirits of nitrous ether, or recrystallized chloral. The taste is very pungent, and for administration it needs free dilution. It may be given with whisky or syrup of licorice. Somnal is inflammable, burning with an alcoholic flame; it does not evaporate quickly, and leaves a greasy stain upon blotting-paper. Specific gravity greater than water; reddens litmus paper slightly.

The experiments performed upon animals by Dr. Gilman Thompson gave the following results: (1,) The ordinary dose of somnal (30 minims for man) may be given by hypodermic injection to dogs without other effect than drowsiness and slight vertigo and muscular tremor; (2,) A dose of 1½ fluid drachms failed to affect a cat except in the same manner as the dogs; (3,) A fatal dose of ½ a fluid ounce stopped the respiration before the heart, and caused congestion of all the abdominal viscera; (4,) The blood-pressure in the arteries of a dog is temporarily increased by somnal, soon returning to the normal.

The result of giving this mixture fifty-four times as a **Hypnotic** led him to the following conclusions: (1,) The effects of somnal are much more striking and certain than those of urethane, and far less depressing than those of chloral: (2,) There is no vertigo or depression after taking somnal, such as may follow the use of sulphonal; (3,) The action of somnal is usually very prompt, and doses of ½ a drachm, disguised in a little syrup of tolu or whisky, are always well borne, easily taken, and entirely without deleterious effect; (4,) The drug, in doses of 1 drachm, is not powerful enough to decidedly control delirium tremens, maniacal delirium, or severe pain; (5,) In doses of

30 or 40 minims somnal is a safe and reliable hypnotic for ordinary insomnia.

REFERENCES.—[1] "New York Med. Journ.," Nov. 29, 1890; [2] "Dietetic Gaz.," July, 1890.

SPERMINE.

The recent experiments with this agent having arisen out of the claims put forward by Dr. Brown-Séquard for "testicular emulsion" as a rejuvenescent fluid, it may be convenient to preface them by the results of the independent experiments made by Dr. Bogroff, of Odessa[1], with the emulsion made from the testicles of young animals. The physiological effects produced by subcutaneous injection of the fluid were as follows: (1,) Hypodermic injections of a rabbit-testicular emulsion (the only one employed) gave rise to fever in every one and all of persons experimented upon; (2,) The phenomenon cannot possibly depend upon some contamination or foreign admixtures, since it occurs even after injections of an emulsion previously passed through a Pasteurian filter; (3,) The pyrogenic effects seem to be due to the glandular elements alone, since the injection of an emulsion prepared of testicular tunica vaginalis or muscle tissue does not cause any febrile movements; (4,) While being observed in all persons, the febrile "reaction" by no means constitutes something like an "obligatory" or necessary concomitant effect of *every* injection. On the contrary, injections followed by fever may occur in the same person alternately with those causing no febrile rise. As a matter of fact, pyrogenic injections constitute about 33·3 per cent. of all injections; (5,) On certain days, all persons receiving the injections develop a distinct febrile "reaction," while on other days in none can any pyrogenic effects be noted. Curiously enough, the latter is nearly always observed in the case of a tenth, eleventh, and twelfth injection; (6,) The intensity of the fever varies according to the stage of the treatment. After the first two injections the febrile rise is but slight. After a third it attains its maximum level (never above 39°5 C., however). Such maximum elevation also occurs after a fourth, and, sometimes, a fifth *séance*, while subsequent injections are followed by a markedly milder "reaction"; (7,) The maximum number of pyrogenic injections in individual cases, as well as febrile rises of the maximal tension, are observed in patients, characterized by a considerable failure of their general nutrition; (8,) The "reaction" commences in two or three hours after an injection, and attains its highest level in six or eight, after which the temperature swiftly sinks to the standard. In some exceptional cases, however, the duration of the "reaction" may surpass twelve or even fifteen hours; (9,) After

discontinuing the injections, the systemic temperature becomes slightly subnormal, the morning fall amounting to 0·22° C., and the evening one to 0·25°. In other words, "an increased systematic combustion seems to be replaced by a somewhat decreased metabolism"; (10,) In an overwhelming majority of cases, during the treatment the bodily weight moderately sinks; in a small proportion of patients it remains unaltered, and that notwithstanding the occurrence of febrile movements. The latter fact can be explained only by an increased action of the digestive organs and an increased assimilation; (11,) After discontinuing the injections, the body's weight always increases, the surplus varying from 1 to 25 (Russian) pounds (from 0·9 to 22·5 lb. avdp.); (12,) The daily quantity of the urine decreases both during and after the treatment, which is due to an increased action of the skin; (13,) In days of the injections the daily quantity of urea similarly markedly decreases, the diminution averaging 4·5 grammes. It is also diminished in the intervals, though to a much lesser extent (on an average, 2·25 grammes). The decrease of urea is observed not only after subcutaneous, but also after rectal, injections of the emulsion. There are many grounds to admit that the diminution is dependent upon the testicular emulsion increasing the systemic combustion of non-nitrogenous substances and, on the other hand, inhibiting disintegration of proteid bodies; (14,) In some patients the emulsion distinctly stimulates the secretion of saliva, the flow occasionally amounting to a genuine salivation; (15,) Appetite also increases, and that sometimes to an enormous degree; (16,) "The intestinal tone moderately increases;" (17,) The manual muscular strength is augmented (that of the right hand twice as much as that of the left); (18,) The latent period of cutaneous reflexes is shortened during the injection course, and lengthened in the after period ("that is, the nerve conductibility at first increases, and subsequently is diminished"); (19,) The period of a diminished conductibility coincides with that of an increased muscular strength. Hence the increase in the latter must be due either to some alterations within the muscle tissue itself, or to an intensified action of psychomotor cerebral elements; (20,) Cutaneous sensibility is augmented, the increase continuing to grow even in the period of a lengthened latent stage of cutaneous reflexes, which partly justifies the conclusion that "the emulsion also stimulates the action of cerebral cells, receiving peripheral cutaneous irritations"; (21,) The vascular tone becomes lowered, as is shown by (*a*) frequently recurring flushings of the face and skin in general; (*b*) increased secretion of the saliva; and (*c*) increased perspiration, all of which phenomena are observed not only shortly

after the injection, but sometimes for many subsequent days ; (22,) The action of the testicular fluid on the cerebral tissue seems to consist, essentially, partly in inducing congestion, partly in altering the metamorphosis and composition of morbidly-changed nerve-cells ; (23,) The proportion of hæmoglobin in the blood does not undergo any appreciable alterations ; (24,) The pulse is usually moderately accelerated. Sometimes, however—especially in stuporous patients—it becomes slower ; (25,) The cardiac action becomes stronger. The influence of the emulsion on the heart does not appear to have any connection with fever, since in one and the same patient the frequency of cardiac beats during a febrile rise may be lesser than during a non-febrile period ; (26,) In qualitative regards, rectal injections of the emulsion act identically with hypodermic ones, the difference being only quantitative ; (27,) Brown-Séquard's injections are quite safe, provided the emulsion is prepared and used with all sterilizing precautions.

Therapeutical Effects.—The author's clinical observations were conducted on four patients suffering from **Virile Impotence,** and sixteen **Insane ;** of the latter, six were simultaneously suffering from **Scurvy** of a very severe form, and one from generalized **Furunculosis.**

(1,) *Sexual Impotence.*—The patients' age varied from twenty-nine to forty-nine, the duration of the affection from one to four years. Of the four cases, in one the injection failed to make any impression, while the other three were cured. In one of the successful cases the very first injection was followed by an excessive sexual excitement, which, however, gradually subsided, the patient retaining a normal sexual power ever since. (Six months elapsed.) Another gentleman recovered after twenty-two injections. The third case is the most instructive of the three, since it totally excluded any possibility of the effects of a "suggestion." The case refers to a neurasthenic gentleman with visible impotence of three years' standing, who had been previously treated by Motchutkovsky's suspensions with the result that his neurasthenia had disappeared, but impotence remained as bad as ever. For a long while he stubbornly refused to undergo Brown-Séquard's treatment, but ultimately, though very reluctantly, consented, believing still that it was good for nothing. After a tenth injection he declared that he was growing worse. After a twenty-second, however, his sexual power began to distinctly improve, and after a thirtieth became perfectly normal.

(2,) *Furunculosis.*—The patient got rid of his obstinate disease after fifteen *séances.*

(3,) *Scurvy.*—In one of the severest cases a course of the emulsion

gradually brought about a considerable amelioration. The patient becoming convalescent, the injections were discontinued. An alarming relapse swiftly followed. The treatment being resumed, the patient's state again substantially improved in eight days, and a complete recovery ensued in about a month. In another case ten injections afforded a marked relief. As soon as the treatment was stopped, the disease relapsed, to rapidly end in death. In the remaining four cases, the treatment apparently proved of no avail.

(4,) *Mental Disease.*—Of sixteen cases, in two decidedly beneficial effects were observed. One of the two patients was afflicted with *melancholia cum stupore*, not the slightest tendency to amelioration having been noticed during his eight months' stay in the asylum. After fifteen injections all serious symptoms vanished. The treatment being discontinued, his condition began to grow worse in a month or so. Another course of the emulsion again rapidly led to a great amelioration, justifying the patient's discharge (unfortunately he was subsequently lost from observation). The other patient, a man of thirty-two, was apparently suffering from a hopeless moral insanity with delirium of persecution, the disease having been stationary for the last three and a half years. After a course of the injections and twenty-eight enemata, a complete recovery ensued. No relapse yet occurred (three months have passed since his cure). In the remaining fourteen cases (three of epilepsy since infancy, four late progressive palsy, one cerebral syphilis with chronic alcoholism, one mania of ten months' standing, and four stupor), the therapeutical effects were *nil.*

Dr. Zenetz[2], of Warsaw, has conducted experiments with Brown-Séquard's emulsion in some cases of tuberculosis, and also in some healthy persons. He also tested his results by giving hypodermic injections of sterilized cow's milk in the same persons. After carefully observing the results in both instances, he came to the general conclusion that "in patients suffering from severe diseases (such as phthisis, tabes, etc.) the heat-regulating nerve centres are in the state of an intense disturbance, and hence can be at once thrown out of their equipoise by hypodermic injections of such fluids as Koch's tuberculin, Brown-Séquard's emulsion, or a new or sterilized milk, while in healthy persons, with a normal regulation of systemic heat, the said liquids fail to produce any effects of the kind."

Spermine is an organic base, the phosphate of which forms crystalline salts, which were discovered in the spleen in cases of leukæmia by Charcot and Robin in 1853. They have since been found in bronchitic sputum, in the blood, in dried human semen, spinal marrow, and the liver and heart of a calf.

Professor Poehl[3] has prepared spermine from the testicles and prostatic glands of young bulls and stallions. He claims that after subcutaneous injections of 1 and 2 per cent. solutions of the hydrochlorate of spermine there was slowing of the pulse, with increased vigor of the heart's contraction, elevation in the pulse wave, and marked reduction of blood pressure.

Another preparation has been since then introduced, first under the name of spermine, and later as piperazidin, which appears to be identical with the base discovered by Schreiner in 1878. This has been analyzed by Dr. Hoffman, who considers it as diethylendiamin, with the formula— $C_2H_4\langle^{NH}_{NH}\rangle C_2H_4$.

The experiments made by Dr. Bock, of Berlin, were entirely negative as regards its stimulating properties. Dr. Paul Werner[4], criticising the results obtained in certain successful cases reported, argues that in no case was the benefit derived of a striking or unusual character. In other cases (as with Brown-Séquard himself, according to Dr. Werner) the tonic effect was strictly psychical, the temporary increase of strength being due to the excitement of the experiments and a confident hope of their results.

On the other hand Dr. Veliaminoff[5], of St. Petersburg, one of the foremost Russian surgeons, says that he resorted to Poehl's spermine in four cases of grave and prolonged operations in extremely exhausted patients. The results of the injections (under the skin) were uniformly brilliant: (1,) The patients bore the operation in an excellent way; (2,) Notwithstanding very large amounts of chloroform used (in one case, in which the operation lasted two-and-a-half hours, as many as six ounces of the anæsthetic agent were spent), the cardiac action left nothing to be desired; (3,) The patient's state in the after period remained reproachless all through.

Dr. Roshtchinin[6], of St. Petersburg, after recording some cases of nervous affections, both functional and organic, in which good results appeared to have followed a series of injections of spermine, and of diabetes mellitus, and pulmonary tuberculosis in which remarkable results were obtained, and also two cases in which it was used to avert collapse, arrives at the conclusion that: (1,) "A brilliant future can be safely expected for spermine"; (2,) The remedy is "not only endowed with ordinary stimulant or analytic properties, but also possesses a remarkable power of strengthening energy and vital capacity of cerebro-spinal nerve elements, as well as of increasing the systemic vital energy in general, of promoting the systemic metabolism, and of regulating the cardiac and nerve action"; (3,) Spermine, however, does

not represent anything like a "specific" remedy either for diabetes or tuberculosis—its beneficial effects in these diseases should be attributed simply to its general biological properties just mentioned ; (4,) The latter are "almost identical" with those of Brown-Sèquard's testicular emulsion. Spermine, however, offers the advantage over the emulsion in its being administered comparatively more easily and more conveniently.

A more recent analysis of spermine by Prof. Poehl[7] renders it probable that the substance may belong to some more complex bases having the general (serial) formula $C_{10}H_{26}N_4$ ($C_5H_{12}N_2$). The substance has proved to be neither ethylenamin nor diethylendiamin, nor piperazidin, as he once believed.

It is claimed that spermine, or that form of it which has been introduced under the name of piperazidin, has great powers of dissolving uric acid. This we have referred to under that name (see "Piperazidin.").

REFERENCES.—[1] "Vratch" No. 14, 1891, p. 367 ; [2] "Vratch" No. 9, 1891, p. 241 ; [3] "Therap. Monat.," Jan. 1891 ; [4] "St. Petersburgh Med. Woch.," Oct. 4, 1890 ; [5] "Vratch" No. 10, 1891, p. 283 ; [6] "Vratch" No. 10, 1891, p. 282 ; [7] "Vratch" No. 10, 1891, p. 281.

STRONTIUM.

From some experiments made by Dr. Laborde it would appear that both the tartrate and the lactate of strontium possess marked **Diuretic** powers. Chemical examination as to the mode of elimination of strontium and its salts seems to show that it is removed both through the urine and fæces, while considerable quantities remain deposited in the liver and bones.

The author, comparing these salts with those of barium and potassium, considers that they are relatively innocuous, and strontium itself, even when given in large doses, produced known toxic effects that rather acted as a tonic.

REFERENCE.—"La Tribune Mèdicale," Dec., 1890.

SULPHALDEHYDE.

In the course of an investigation as to the physiological action of some aldehyde derivatives, Professor Lusini has made some experiments with sulphaldehyde. Sulphaldehyde, or thialdehyde, is obtained as a malodorous oil by the action of sulphuretted hydrogen upon ethylic aldehyde in aqueous solution. When this liquid is treated with acid, polymerization takes place, two solid trithialdehydes ($C_2H_4S_3$) being formed, constituted similarly to paraldehyde. The α-compound melts at 101° C. and the β-compound at 125° C., but

commercial specimens of trithialdehyde vary in their melting points. The sample actually used is stated to have been a mixture of aldehyde and trithialdehyde melting at 45°—50° C. It was administered to frogs and rabbits, and was found to induce deep tranquil sleep, without any symptoms of excitement. In consequence of its slight solubility the hypnotic effects did not supervene until some time after its administration, but it acted more powerfully than paraldehyde, 0·010 gram. of sulphaldehyde sufficing to narcotize a frog of average size equally with 0·025 gram. of paraldehyde. Sulphaldehyde is entirely eliminated by the urine, which is characterized by its peculiar odour.

REFERENCES.—"Nouv. Rem.," Nov. 8, 1890, p. 500; "Pharm. Journ.," Nov. 29, 1890.

SULPHAMINOL (Thiooxydiphenylamine).

This has been introduced as an antiseptic. It is a yellow powder formed by exposing the salts of oxydiphenylamine dissolved in water to the influence of sulphur. It is soluble in alcohol and acetic acid, and also in alkaline solutions; it is free from taste and odour. When brought in contact with animal liquids it splits up into sulphur and phenol, and may be supposed to possess the antiseptic qualities of both. Dr. Schmidt, of Frankfort, has used it in cases of suppuration in the maxillary sinus, and finds it an effectual deodorant. Professor Kobert[1] has made various experiments, which lead him to consider that it is non-poisonous.

REFERENCES.—[1] "Journal de Médecine," Sept. 7, 1890; "Therap. Gazette," Oct. 15, 1890.

THEBAINE.

Some investigations have been made with this opium alkaloid in conjunction with methylthebaine sulphate, narcotine, hydrocotarnine and cotarnine, with a view to studying the relationship between their chemical constitution and physiological action.

Dr. Ralph Stockman and Mr. D. B. Dott, after recording a careful series of experiments, conclude "that the chemical change represented in these three substances does not alter the similarity of their action, but simply affects their dosage. No radical change of action is produced in them by the change in chemical constitution. In all three the kernel of the molecule is probably the same, and until it is altered the changes in physiological action are only superficial. We have shown that the same is true for morphine, and it is now known that it also holds good for some other alkaloids, such as cocaine and caffeine."

REFERENCE.—"Brit. Med. Journ.," Jan. 24, 1891.

THIALDINE.

Some experiments made with this substance show that: (1,) It is very poisonous in frogs in the dose of ½ grain for every one hundred and fifty grains body-weight, though much less poisonous in rabbits; (2,) Its administration is followed in the frog by profound sleep, with loss of general and reflex sensibility, depressed sensibility of the motor nerves, while the muscular irritability remains intact. In the rabbit the anæsthesia is less intense, and interrupted by excitation; (3,) It invariably causes slowing of the pulsations of the heart, which nevertheless remain perfectly regular. It is only when given in very large doses, and then only immediately before death, that the pulsations of the heart become irregular; (4,) When given in small doses, the slowing of the pulse is only transient. Injected in small doses in the excised heart, thialdine diminishes the number of pulsations, at first prolonging the diastole, after rendering the contractions of the heart irregular and more rapid, and finally arresting the heart in diastole; (5,) In large doses it slows at the outset cardiac contractions, and then leads to the arrest of the heart in diastole.

REFERENCE.—"Les Nouveaux Remèdes," Nov. 8, 1890.

TRIONAL and TETRONAL.

These substances are allied to sulphonal, but they contain three and four ethyl groups respectively, instead of two (see Introduction to this section). Messrs. Baumann and Kast[1] concluded that the hypnotic action of this class is a function of the ethyl groups in the compound, and proportionate in intensity to their number, and that the SO_2 group exercises no influence in this direction.

Messrs. Barth and Rumpel[2] have made some experiments with a view to testing this theory. In order to make the comparison as close as possible, the experiments with trional and tetronal were made upon patients that had already taken sulphonal with advantage. The results obtained corresponded to the experience obtained upon dogs only so far as to show that both trional and tetronal possess pronounced **Hypnotic** properties when administered to human beings; but they did not confirm the theory as to their quantitative action, as practically the same doses of the new compounds as of sulphonal were found to be required to produce a certain effect, instead of one-half or two-thirds, as expected. In a few cases where sulphonal was slow in its action, trional or tetronal produced a full hypnotic effect; but it was remarked that when any one of the three compounds had been administered several days in succession, a change to one of the others almost always intensified the action. At present, Messrs. Barth and Rumpel content themselves with saying that probably the indications

for the use of trional and tetronal correspond with those for the use of sulphonal, but that in certain nervous conditions which are refractory towards sulphonal, the other compounds might prove more effective. Neither trional nor tetronal produced any perceptible effect upon the outbreak or course of delirium alcoholicum, even when given to the extent of 4 grammes (60 grains) daily. As a **Hypnotic,** tetronal was in fourteen cases superior to sulphonal, in six cases equal, and in four cases inferior. Trional in seventeen cases was superior, in six cases equal, and in seven inferior. No injurious by-effects were observed in any of the two hundred and twenty cases in which trional and tetronal were administered.

REFERENCES.—[1] "Pharm. Journ.," vol. xx., p. 161; [2] "Deut. Med. Woch.," Aug. 7, p. 32; "Pharm. Journ.," Aug. 30, 1890.

TURPENE IODIDE.

Dr. W. H. Gregg recommends turpene iodide in all **Acute Lung Affections.** He believes that it enters the circulation unchanged, because it acts as quickly as if it were injected hypodermically. Though it is a powerful antiseptic, he has never seen any ill effects from its use. In acute affections of the throat it may be used in spray, while in other cases it may be given to adults in 10-drop doses on a teaspoonful of sugar once or twice in the day and at bedtime. The morning dose should be followed by a glass of milk. Larger or more frequent doses are apt to excite too great a discharge of urine.

REFERENCE.—"New York Med. Journ.," Feb. 14, 1891.

URALIUM (Chloral Urethan).

This hypnotic is hardly likely to come into general use on account of its insolubility. It will dissolve in alcohol, but only in the proportion of about 3 grains to a drachm, and little hypnotic effect can be produced unless 15 grains are given, and then it is by no means certain in its results. Drs. Schmitt and Parisot found that it was not well borne by patients, and readily occasioned digestive troubles.

Part II.—NEW TREATMENT.

A Dictionary of New Treatment in Medicine and Surgery, 1892.

ABDOMINAL INJURIES. *A. W. Mayo Robson, F.R.C.S.*

In abdominal injuries, a larger experience and more accurate records of cases show how the usually accepted symptoms of visceral rupture are often absent, and how even in gunshot wounds the diagnosis must in many cases be inferred from the ascertained course of the ball.

There are few injuries to any region of the body which prove, in proportion to their number, so fatal in their results as contusions of the abdomen, attended with rupture of the intestine without wound of the abdominal wall. To the eye there may be in the early stage nothing more than a bruise of the part struck, and the shock which attends such injury may not be sufficient to prevent the patient from going a long distance before the inevitable septic peritonitis supervenes. We doubt if there is anyone of large experience in surgery who cannot from his own practice cite striking examples of the misleading appearance of harmlessness these lesions often present. As these injuries are so extremely fatal, the very difficulty of diagnosis imposes the duty upon the surgeon of clearing up the doubt and of determining with certainty whether or not they are present. This is the first point that needs to be made plain. To wait until the diagnosis is certain is to miss the golden opportunity for treatment, and to allow the onset of septic peritonitis to rob the patient of nearly every chance of life.

A case reported by Dr. Churton and myself[1] apparently showed that a patient could walk about for several days after rupture of the ascending colon in a football accident, and it was not until the fourteenth day that he was admitted to the infirmary for treatment, there being then acute peritonitis.

Mr. Jonathan Hutchinson[2] also reports a case where a patient lived for sixteen days after a rupture of the duodenum, caused by a kick at football. This case shows the difficulty in diagnosis, as although there

was profound collapse for the first day, he rallied, and during the second week his temperature was normal, his pulse slow, and his abdomen free from distension.

Rupture of the bladder, both idiopathic and traumatic, has occurred without characteristic symptoms, as in cases reported by Mr. W. H. Brown and others.

When there is doubt as to intra-abdominal rupture of viscera, a small incision in the middle line and an opening in the peritonæum large enough to admit a finger will at once settle the diagnosis. If there be internal hæmorrhage the blood will at once well up into the wound; if extravasation of visceral contents, they will appear; if escape of gas from stomach or bowels, air will escape, odourless if from stomach, fœtid if from bowel. If nothing be found the slight operation need not be extended, the patient may be treated by rest and opiates, and a good prognosis may be given with confidence. During the past year this was done in a doubtful case which I was asked to see, there being absence of liver dulness and other signs of ruptured intestine. Nothing was found at the operation, and the patient made a good recovery.

Mr. Croft[3] has reported a third case in which exploration has revealed rupture of the bowel, which he has been able to satisfactorily close. Unfortunately, in the last case, the patient was too feeble to recover, although the autopsy showed the parts operated on to be in every way satisfactory.

For detailed symptoms, diagnosis, and treatment, reference may be made to the "Annual" for 1889-90-91.

For gunshot wounds of the abdomen, surgical treatment continues to yield far better results than the old-fashioned method of doing nothing, but that medical treatment is not altogether hopeless a case reported by Mr. Hutchinson[4] will prove.

Two cases of gunshot wound of the abdomen, with injury of intestines, reported in the "Occidental Medical Times" (December, 1890), present an interesting contrast[5]:—

(1,) A rancher, aged forty-three, was shot while engaged in an altercation. Five hours after the injury he was found in great pain, but otherwise in good condition. The external wound was found three inches below the left iliac crest and four behind the anterior superior spine. The ball could be felt beneath the skin half an inch above and one inch to the right of the umbilicus. Dr. T. W. Huntington performed laparotomy. The abdomen was opened by a median incision; perforations were found: (1,) In the anterior wall of the stomach: (2,) About half way down the small intestine; (3,) A double

perforation eighteen inches lower ; and (4,) Another double perforation six inches lower. Each wound was closed immediately upon its discovery by a continuous catgut suture of the muscular and mucus coats, and an interrupted Lembert suture for the peritoneal coat. The supply of catgut having become exhausted, the lowest intestinal wound was closed with iron-dyed silk ; silver wire was used for the abdominal wound. The operation lasted two hours and a quarter. The patient never afterwards had a bad symptom of any kind, and on the twenty-fifth day was able to walk out. The bowels had acted spontaneously several times during the first week, and regularly thereafter.

(11,) The other case was a man, aged forty-one, wounded at the same time as the first. The wound of entry was in the median line of the abdomen, midway between the symphysis pubis and the umbilicus. The ball appeared to have passed through the abdominal cavity to the right, through the right ilium, and was found in the gluteal muscles. The patient suffered no pain, and objected to operation, which was not urged. He was removed to a hospital. Violent peritonitis developed. Owing to pain in the vicinity of the bullet an incision was made in the gluteal region, evacuating fœtid gas and pus with the bullet ; loose fragments of bone were removed and a drainage tube introduced. The patient began slowly to improve, but was still under treatment two months after the injury. Dr. G. A. White, who reports this case, discusses the question whether the intestines were wounded in this case without arriving at a positive decision, though thinking it highly probable that they were. He comments on the interesting contrast presented by the other case, in which laparotomy was performed, with the result that the patient had no peritonitis, no pain, no fever, and was well in less than four weeks.

REFERENCES.—[1]Dr. Churton and Mr. Mayo Robson, "Brit. Med. Journ." March 7, 1891, p. 520; [2]Mr. Hutchinson, "Arch. of Surg.," Oct., 1891 ; [3]Mr. Croft, "Lancet," June 17, 1891, p. 142 ; [4]"Arch. of Surg.," July, 1890 ; [5]"Occidental Medical Times," June, 1890, and "Brit. Med. Journ." Supplement, Feb. 21, 1891.

OTHER REFERENCES.—Lamothe Ramsay, "Ann. of Surg." Oct., 1891 ; Dandridge, "Cincinnati Lancet Clinic," Feb. 7, 1891, and "Med. Chron.," June, 1891 ; Mayo Robson, "Clin. Soc. Trans.," vol. xxi ; Senn, "Report of Berlin Congress," 1890.

ABDOMINAL SURGERY. *A. W. Mayo Robson, F.R.C.S.*

The year's record of Abdominal Surgery consists rather in the perfecting of details and in the recording of experience, than in the adoption of new methods. Although septic peritonitis is the most

frequent cause of death after laparotomy, other unfavourable results occur at times to all operations quite independent of infection. Intestinal obstruction is one of those accidents occurring in about 1 per cent. of all cases[1]. This may occur from: (1,) Incarceration of intestine between the pedicle where fixed to the abdominal wall, and some other viscus; (2,) Inflexion of intestine by an adhesion attached to it; (3,) Twisting on its axis. The second form is the most common.

Dr. Maurice Collas has collected a series of twenty-three cases of this nature. Of these, eighteen were operations for ovariotomy, and the remaining five followed other operations on the pelvic organs. Fifteen of the cases had their true nature revealed only at the *post mortem* examination, whilst operations were performed in the remaining cases, and in four instances were completely successful. Most frequently the symptoms of intestinal occlusion appeared within ten days after the operation, but they were delayed in one case as long as six years. In most instances the bowel was occluded by inflammatory adhesions or subsequent cicatricial contractions. In more than one instance volvulus occurred, but it seems doubtful how far this could be ascribed to the results of the previous operation. When the symptoms did come on they were in all cases rapid in their onset, and it would appear that in such cases there is but little hope to be placed in any other treatment but laparotomy[2].

Various attempts have been made with a view to the prevention of visceral adhesions, by careful peritoneal toilet, by lavage, by floating the intestines in normal salt solution, or by covering the stump with vaseline. But no method has proved invariably successful.

Dr. Sterne has employed collodion to paint over the pedicle; he says it entirely prevents adhesion, and has no injurious effect.

This method can only be partially applicable, and cannot be employed to paint other than pedicle adhesions.

We have reason to be well satisfied with careful asepsis and peritoneal toilet, taking especial care to arrange the omentum when possible over the front of the intestines, between them and the wound.

Strong antiseptics have been found in practice to be disadvantageous in peritoneal surgery. A series of experiments by Drs. Delbet, Grands, Maison, and Breuet,[3] apparently prove that the endothelial cells lining the peritonæum are damaged by antiseptics strong enough to kill micro-organisms, and when the endothelium of the peritonæum is destroyed, the resisting power of the serous membrane is impaired.

The experiments which were performed on dogs consisted in applying antiseptics to certain regions of the peritonæum, and then flushing with water. On killing the animal after some interval, and then staining sections of the peritonæum with nitrate of silver, the endothelium was always found damaged.

The difficulty can be overcome by using an aseptic liquid, such as boiled water, or mild antiseptics such as a solution of boracic acid: these are perfectly safe, and, as a rule, efficient; the stronger antiseptics being employed for the hands, instruments, etc.

Drainage in abdominal surgery, though necessary at times, is not an universal blessing, and some surgeons, among whom we would mention Sir Spencer Wells[4], think it is employed more frequently than necessary, and that when antiseptic precautions are adopted, drainage is, as a rule, unnecessary.

Dr. Robert T. Morris[5] considers that the best drainage tube is the patient's intestine, which runs through the middle of the great lymph sac of the abdomen, ready to abstract any collection of fluid liable to harbour and cultivate germs. Aperient salts will clear away any such collection and allow of its escape by the anus. The alimentary canal may sometimes fail to drain, and if peritonitis is beginning to develop in spite of aperients, the abdomen should be opened again and drained. There are objections to hard and soft drainage tube, and gauze used for abdominal drainage may become so firmly adherent to the intestines that its removal means peril for the patient. Dr. Robert Morris has contrived a wick which drains efficiently, and can hardly cause pain, fæcal fistula, etc. The wick is a small roll of absorbent bichloride gauze, around which are wrapped a couple of thicknesses of Lister's protective oiled silk. The gauze protrudes a little from each end of the cylinder. A few holes are snipped in the protective so as to allow serum to reach the gauze at all levels of the wick. In cases where injections through a tube are desirable, a soft rubber tube can be fitted within the wick. When a large gauze packing for the pelvis is needed, an apron of silk can expand over the gauze at the lower end of the wick, and protect the intestines from adhesions to the gauze. The wick acts by capillary attraction, the silk wrapper does not irritate the peritonæum and the appliance is soft, adapting itself to curves, etc. The end of the wick which protrudes from the abdominal wound should be covered with enough cotton wool or gauze to hold all fluid coming from below. The wick empties great quantities of fluid. When the wick is at work the patient must remain on her back, for if the intestines are not inflated with gas, the fluid rises naturally to the anterior abdominal wall instead of settling, as many surgeons

suppose, in Douglas's pouch. If the patient turns on her side, the fluid rising to the highest point will be out of reach of the wick.

In Germany paracentesis is generally performed at what has been styled Monro's point—that is, the centre of a line drawn from the umbilicus to the left anterior superior iliac spine. The choice of this locality is not quite without danger, the epigastric artery having been several times injured, occasionally with fatal results. Dr. Trzebicky publishes in the "Arch. für Klin. Chir." a recent case of injury to the epigastric artery, in which, having no instruments at hand, he was only able to prevent death from hæmorrhage by compressing the iliac artery with both fists. This case induced him to examine a number of subjects, with the result that in several of them he found Monro's point directly over the epigastric artery or one of its branches. It is consequently far safer to puncture in the linea alba or exteriorly to Monro's point. When the linea alba is chosen, it is very necessary to insert the trocar exactly in the middle line, as occasionally an arterial twig runs along the edges of the linea alba, and in at least one recorded case has been injured with a fatal result. Dr. Trzebicky recommends, in cases of serious loss of blood from the paracentesis, the application of a tampon of iodoform gauze, and if this is not sufficient, subcutaneous or direct ligature.[6]

Ventral hernia is unfortunately too frequent after laparotomy, and the ordinary abdominal belt is usually inefficient in preventing a yielding of the cicatrix; the truss shown in the annexed sketch (*Fig.* 1) would seem to be an efficient means of prevention.

It consists of an oval hard-rubber disc, 5½ inches by 2⅞, held in place by an elastic band passing around the body, and bands which encircle each thigh. These bands are fastened to brass pivots which are attached to the front surface of the pad, and admit of any motion of the body without displacement of the pad; the band passing around the body being made of elastic material. The pad is concave on its inner surface and closely approximates the contour of the abdomen.

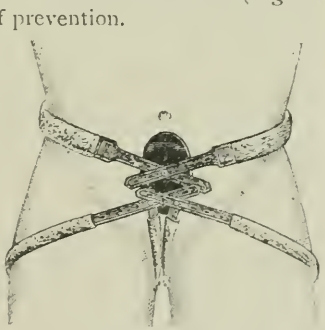


Fig. 1.

The beneficial effects obtained from the use of this pad after several cases of laparotomy seem to warrant its presentation to the profession. It is made by the W. F. Ford Surgical Instrument Company, 315, Fifth Avenue, New York.[7]

Abdominal Surgery is further considered under the headings "Abdominal Surgery," "Peritonitis," "Appendicitis," "Cholelithiasis," "Hernia," "Mesentery," "Intestinal Surgery," "The Surgery of the Stomach, Pancreas, and Liver."

REFERENCES.—[1]Dr. Sterne (Heidelberg), "Ann. of Surg.," Jan., 1891; [2]Dr. Maurice Collas, "Thèse de Paris," No. 267, 1891, and "Brit. Med. Jour.," 1891; [3]Dr. Delbet, "Brit. Med. Jour.," Feb. 21, 1891; Dr. Allen (Ohio), "Therap. Gaz.," Aug. 15, 1891; [4]Sir Spencer Wells' Bradshaw Lecture, "Brit. Med. Jour.," Dec. 20, 1890; [5]Morris (New York), Supplement "Brit. Med. Jour.," Aug. 22, 1891; [6]Trzebicky, "Lancet," Oct. 17, 1891; [7]Ford (New York), "Med. Jour.," March 28, 1891.

ABORTION.

Synopsis.—(Vol. 1890, p. 106.) For the treatment of threatened abortion, **Rest**; small tonic doses of **Ergot** when there is hæmorrhage, or the use of **Viburnum Prunifolium**, (gr. ij of extract in pill, thrice daily). **Chloral** combined with **Bromide of Potassium** or **Sodium** is useful for urgent nervous symptoms. In syphilitic cases, **Mercury** and **Iodide of Potassium**. For incomplete abortion, with continuous hæmorrhage, give **Ergot** for one week, and if this is ineffectual, clear the uterus with a dull curette or spoon, dilating the cervix previously, if required. Neuralgia may be the first symptom of abortion, and when occurring in anæmic patients, **Quinine** (gr. x, with Opium gr. j, bis die), is advised as sedative, to be followed by **Liquor Arsenicalis**; in gouty or plethoric patients, **Chloride of Ammonium** and **Bromides** are preferable.

ABSCESS AND FISTULA IN ANO.

Synopsis.—(Vol. 1890, p. 107.) After opening the abscess, syringe out the cavity and fill it with wool soaked in **Ol. Carbol**, 1 in 20. Next day remove this, and dress lightly with **Lot. Rubra, Lot. Nigra,** etc. The blind external fistula may be occasionally cured by injecting a strong solution of **Carbolic Acid**, or **Nitrate of Silver**, keeping the aperture well open. After operation, cleanse the wound daily by syringing with weak solution of **Condy, Sanitas,** or **Carbolic Acid,** and then dress with wool soaked in **Olive Oil,** or some lotion, as **Lot. Nigra. Lot. Rubra, Weak Carbolic Acid, Sulphate of Copper,** etc., dressing it lightly, not stuffing it.

Fistula in children, caused by worms, is frequently cured by **Anthelmintics.**

ABSCESS (Retro-pharyngeal). *F. S. Eve, F.R.C.S.*

Sokoloff publishes an exhaustive paper based on fifty-six cases. According to his classification, purulent accumulations in the retro-pharyngeal space may be divided into the following groups: (1,) *Single congestive purulent gatherings* in the retro-visceral cervical space which arise in connection with various inflammatory processes in its vicinity (cervical phlegmon, inflammation of cervical lymphatic glands, periostitis of adjacent bones, parotitis, etc.); (2,) *Tubercular congestive purulent accumulations*, developing in connection with

cervical spondylitis; (3.) *Proper retro-pharyngeal abscesses*, due to inflammatory processes in the space itself.

The author, in common with Verneuil (1842), believes that the "idiopathic" abscess forms, in reality, nothing else than an acute purulent inflammation of the lower retro-pharyngeal lymphatic glands, situated at the level of the second and third cervical vertebræ.

With regard to the symptomatology of retro-pharyngeal abscesses in general, and retro-pharyngeal lymphadenitis in particular, the author draws attention to the fact that disturbances of swallowing and breathing may be sometimes absent altogether, the affection running a latent course; hence a frequent digital examination of the pharynx in infants is advised, more especially in those cases where there is present enlargement of deep cervical glands.

The writer recently had a case under his care in which the abscess was so large that the patient was in immediate danger of death from dyspnœa; the child made a good recovery after incision through the mouth.

Passing to an operative treatment, Dr. Sokoloff lays down the following general rules: (1.) Typical retro-pharyngeal abscesses, situated entirely in the retro-pharyngeal space, should be opened by a sufficiently large incision through the mouth; (2,) Such abscesses as cannot be reached from the fauces, on account of their deep situation, should be cut into externally, through the lateral aspect of the neck, as practised by St. Germain, Bokai senior, Burkhardt, etc. (which method has been successfully resorted to by Sokoloff in five cases); (3,) The same procedure should be also employed in cases where the abscess is spreading towards the lateral surface of the neck, having passed under the external cervical aponeurosis outwards from the vascular bundle; (4.) Traumatic phlegmon of the retro-pharyngeal cellular tissue and tubercular congestive abscesses must be always opened after the external method; (5,) The latter prevents penetration of pus into the respiratory tracts.

References.—"Jour. of Laryng.," May, 1891.

ABSCESS (Tubercular). *F. S. Eve, F.R.C.S.*

The treatment of these abscesses continues to attract attention. Barker[1] advocates the following method for large tuberculous abscesses: The supposed case is one of a psoas abscess in which the bone lesion is apparently stationary, or perhaps healing, but where a large collection is steadily, though slowly, advancing toward the skin of the thigh. A two-inch incision is made over the lower end of the swelling, through which is inserted a hollow gouge connected by a rubber tube with a reservoir of *water*, at a temperature of from 105°

to 110° F., raised five feet above the level of the operating-table. When the water is turned on, it rushes to the fundus of the abscess with considerable force and washes out the cavity. The more solid caseous matter is dislodged by gently scraping with the scoop, and washed out at once. The walls of the cavity are then gently scraped in a methodical manner until the soft lining is loosened and carried away from every part. When the water runs out clear after having been carried to every part of the cavity, the instrument is withdrawn, the excess of water is squeezed out, or removed with sponges if practicable, and two or three ounces of fresh iodoform emulsion are poured in. Sutures are then inserted into the edges of the wound, the excess of the emulsion is squeezed out, the sutures are tied, and a dry dressing is applied so as to exert elastic pressure over the whole area of the abscess for about ten days. No drainage tube is used. He says: "Such a procedure is only demanded for the larger tuberculous collections, such as, for instance, psoas, iliac, and lumbar abscesses. Of course, for those which can be fairly isolated, no treatment is better than to dissect them cleanly out without rupturing them—a practice I am very partial to. This can be done in perhaps a much larger proportion of cases than is commonly supposed, even when the contents are fluid. Again, in the case of softening tuberculous glands, it is the proper thing to dissect round them and remove them entire, and wounds thus made ought to heal by first intention and without drainage. Some of the larger abscesses, such as those alluded to above, may also ultimately be cured by aspiration of their contents and injection of iodoform emulsion. But in my own experience of many such cases this requires considerable time, is uncertain, and is only to be achieved when the contents are very fluid. When there is much solid matter which will not pass through the needle, I know no method so reliable and so speedy as that of mechanical hot water flushing."

Mayo Robson[2] advocates aspiration and the injection of iodoform and ether solution, and gives ten illustrative cases of tuberculous abscess with bone disease.

REFERENCES.—[1] "Brit. Med. Journ.," Feb. 7, 1891; [2] "Brit. Med. Journ.," April 25, 1891.

ACNE. *T. Colcott Fox, M.B.*

Dr. Edward Blake, assuming that "dandruff" is a parasitic affection, traces a clinical relationship between it and pustular acne. He suggests that the microphyte, causative of dandruff, distributed by the comb, brush, and nails, is detained by the secretion from the follicle in which the comedo is about to form, and then sets up acne pustulosa.

A. punctata may be removed by an **Ammonia Soap** (liquor ammoniæ, ♏ x to xxx ; ether, ℥j ; soft soap, ℥j ; keep air tight). First foment a small portion of skin with very hot water, then apply the soap firmly with the ball of the thumb, and very quickly wash away all vestiges of soap. Assisting means are careful dieting, total abstinence from alcohol, sharp outdoor exercise, hot bath, Turkish or electric baths, systematic lung hygiene, sedulous avoidance of excitement, of ices, of cold beverages, no sea bathing, soft woollen clothing, exceptional use of sea bath.

Winfield insists on the **Relief of Genital Irritation**, though this will not lead to a cure in all cases. He recommends frequent use of cold sound in men, and hot vaginal douches in women.

Kaposi uses the following lotion : Washed and precipitated **Sulphur**, powdered **Glycerine, Carbonate of Potassium, Cherry Laurel Water, Alcohol,** 2½ drachms of each, Thoroughly wash the part affected, and apply the solution at night. In the daytime replace by zinc oxide ointment or glycerine.

Isaac recommends **Resorcin,** ½ to 1 drachm ; powdered **Oxide of Zinc** and powdered **Starch,** each 1 drachm ; **Vaseline,** 2 drachms. Apply day and night, or if desirable, remove in daytime with olive oil and soap, and use some inert absorbent powder.

REFERENCES.—Winfield, "Jour. of Cut. and Gen. Urin. Dis.," March 1, 1891 ; Blake, "Lancet," Nov. 27, 1890.

Synopsis.—(Vol. 1890, p. 111.) Tepid or cold sponge baths, followed by friction with a rough towel, and exercise, avoiding undue fatigue, should be taken. The indolent variety requires thorough cleansing of the skin with soap and warm water, and promotion of excretion from the plugged gland ducts by pressure and local massage, aided by hot steaming and douching. Comedones may be expressed by a watch key. Diet must be nutritious, with free allowance of fats, and the bowels must be kept regular. **Sulphate of Magnesia or Soda,** or both, with **Sulphate of Iron** and **Sulphuric Acid** as aperient, if necessary. *Locally :* **Sulphur** in powder, lotion, or ointment, preferably the two latter, and **Naphthol** may be combined : ℞ Naphthol, 10%, Sulph. Præcip. 50%, Green Soap, 20%, Vaseline, 20% ; to be spread on the face and left on from half an hour to an hour, repeating this till the skin peels off. In obstinate cases: ℞ Powd. Chalk, 5% ; β Naphthol, 10% ; Camphor, 10% ; Vaseline, 10% ; Green Soap, 15% ; Præcip. Sulph, 50%, M. **Resorcin,** 20% strength, as in Lassar's paste, is excellent. To abort small acne papules, touch them with pure liquid **Carbolic Acid,** and immediately paint on flexible **Collodion.** Large or indolent papules must be incised, and Kaposi's acne lancet is best for this ; scraping the surface freely with the dermal curette as a preliminary, then douching with hot water before applying lotion or ointment. In the irritable variety, avoid strong soaps and undue friction, and use soothing applications.

(Vol. 1891, p. 88.) Avoidance of excess of meat and spices ; applications of **Warm Lotions** frequently through day, or **Spray** with **Watery Vapour**; friction with **Powdered Soaps.** ℞ Lard or Vaseline 20 parts (by weight);

Precipitated Sulphur 2 parts; Essence of Rose 3 parts, M.; or ℞ Sulphur 15 parts (by weight); Camphorated Alcohol 30 parts; Water 250 parts.; dissolve. The lotion to be used in the evening, and not rubbed off until morning. In stubborn cases friction with **Ol. Cadini** or use of **Vigo's Plasters** every night. **Black Soap** applied for four or five days (this is very irritating). If these fail, **Scarification, Cauterisation,** or **Ignipuncture.** For Comedones washing with hot water and soft soap and free friction with towel before squeezing them out. **Alkaline Sulphur Lotions,** *e. g.*, ℞ Sulph. Precip. gr. 15: Glycerine, ʒss.; Sp. Camphor ♏5; Aq. Calcis ad ʒj, M. Apply with a sponge, let it dry and sponge off in morning without washing. ℞ Sulph. gr. xv. Soft Paraffin or Benzoated Lard ʒj; Ac. Carbol. ♏x, M. Ft. Ung. Pot. Carb. gr. 15 may be added to render it alkaline. If inflammation exist, ℞ Hydrarg. Perchlor. gr. ½; Emuls. Amyg. ʒj, M., or Zinc or Lead lotions (not using the latter for the face). ℞ Bis. Subnit., gr. 20; Glycerine, ʒj; Aq. Rosæ, ʒj, M. (Zinc. Ox. may be substituted for Bismuth.) *Internally*: Avoidance of Beer and Sweet Wines. **Friedrichshall Water. Sulphur** internally, specially for acne indurata. In anæmia, **Iron** with a **Laxative.** ℞ Ferr. Sulph. gr. 2; Ac. Sulph. Dil. ♏5; Mag. Sulph., Sod. Sulph. āā gr. 20; Aq. Menth. Pip. ʒj, M. **Arsenic.**

Inhalation of **Oxygen,** or drinking **Oxygen Water, Peroxide of Hydrogen** ♏15 to ʒj; **Chlorate of Potassium** gr. 15, with **Guaiacum Resin** in lozenge. **Sulphur.** ℞ Boric Acid ʒss; Alcohol ʒviij, M. Apply at night after bathing face in hot water containing a few drops of **Ammonia,** rinsing in cold water and drying; also in morning without washing. **Arsenic Sulphide** gr. $\frac{1}{100}$ (p. 12).

ACNE ROSACEA.

T. Colcott Fox, M.B.

Kaposi ascribes this condition to chlorosis, dysmenorrhœa, sterility in young women; to disturbances connected with pregnancy, the menopause; to chronic dyspepsia and alcoholism, excessive and repeated hydrotherapeusis, long exposure to weather, acting specially in those predisposed to stagnation of the circulation. Besnier recognizes as a factor any cause which tends to suspend the innervation of the circulation of the face ("flush patch" of Hutchinson), or hinder the return of blood directly or indirectly, *e.g.*, perturbations of central nervous system, irritations of viscera, as the stomach, liver, digestive tube, uterine apparatus, embarrassed heart and lung circulation, excitations originating in the mouth, teeth, nose. The internal treatment obviously must vary with the pathogenetic conditions present, and these require the most careful unravelling. Besnier corrects any pathological condition present (generally digestive or uterine), regulates the hygiene of the disordered viscus, ordains a severe diet and exclusion of alcohol, ensures perfect action of the bowels, and stimulates the general circulation by derivatives to the lower extremities, and by warm and sulphur baths, douches, and frictions. In the irritative forms he recommends local anodynes at first, then stimulant and resolvent applications. If these fail he resorts to multiple and reiterated scarifications, which are used at Vienna and Paris with much greater

frequency and freedom than in Great Britain. As resolvents Kaposi recommends **Emplast. Hydrargyri** for nodules, **Sulphur Pastes** (Sulphur præcip. et lav., Glycerine pur. Pot Bicarb. Aq. Laur. Cerasi. Spirit (Montpellier), āā 10 parts at night, or **Tinct. Iodi** or **Iodized Glycerine** applied 8 to 12 times daily for three or four days, and then covered with gutta-percha tissue. In the day-time soothing and cosmetic applications are often called for.

Unna recommends **Ichthyol Varnish** in acne rosacea, and lupus erythematosus. These varnishes dry in two minutes, can be easily washed off, and do not irritate. They do not give the compression effects derivable from collodion, but they are not readily removed by perspiration, as zinc ichthyol jelly may be.

Ichthyol, 40·0; **Starch,** 40·0; **Sol. of Albumen,** 1 to 1½; **Water,** to 100. Moisten the starch uniformly with the water: then thoroughly rub in the ichthyol, and finally mix the solution of albumen.

Ichthyol, 25·0; **Carbolic Acid,** 2·5; **Starch,** 50·0; **Water,** 22·5. Dissolve the ichthyol and carbolic acid in the water by the aid of heat and slowly rub up an equal amount of starch.

REFERENCES.—J. Hutchinson, "Brit. Jour. of Derm.," Jan., 1891; Kaposi's "Lectures on the Path. and Treat. of Dis. of the Skin," 2nd French edition, Besnier and Doyon, 1891.

Synopsis.—(Vol. 1890, p. 112.) **Calamine Lotion,** with a drachm **Precipitated Sulphur** to each 4 ounces, is useful as a paint at night, after bathing with very hot water and carefully drying; in the morning, wash with tepid water (no soap) and dust with **French Chalk,** containing Salicylic Acid 2%; or **Vlemingkx's Solution,** ½ or ¼ usual strength, may be substituted for the Calamine and Sulphur lotion. Attend to menstruation and digestion; hot vaginal douche benefits some; **Ergot** in menorrhagic cases; **Permanganate of Potass** in amenorrhœa: Ext. Salicis Nigræ, ℥ss doses, is often useful.

(Vol. 1891, p. 87.) In simple cases **Ichthyol** gr. ¾ internally, and as lotion externally, applying at night ℞ Zinc ointment 20 parts, Rice powder 5 parts, Sulphur 2 parts, M. When vascular dilatation is most prominent symptom, puncture venous trunks with Hebra's instrument. In light cases Ichthyol soap, always using warm water for washing.

If stomach be deranged, ℞ Bis. Subnit gr. 15-20, with Tragacanth and Peppermint Water, and a little Carbonate of Soda, twice or thrice daily. Mild Bismuth or Zinc Lotions. Incise pustules, and apply **Carbolic Acid** or **Nitrate of Mercury. Resorcin** 2 to 5% **Alcoholic** and **Watery Solution** checks oily secretion in face, and may be added to Sulphur Lotions.

ACNE VARIOLIFORMIS.

Synopsis.—(Vol. 1890, p. 113.) Scrape and apply **Black Wash,** and an ointment of **Carbonate of Zinc** with a little **Salicylic Acid.** Internally, a mixture of **Acetate of Potass, Nux Vomica** and **Rumex.** ℞ Resorcin, 2 parts; Boric Acid, 2 parts; Vaseline, 20 parts.

ACROMEGALY. *Frank J. Wethered, M.D.*

Considerable discussion has been raised with regard to this disease, which has only lately been recognized by medical men. The cases on record are now fairly numerous. Its etiology is but little known. A case in which shock from a fright appeared to be the cause of the onset of the disease is recorded by Professor Pell[1], of Amsterdam. A woman, twenty-five years of age, unmarried, was admitted in October, 1890, complaining of pains in the head and limbs and general weakness. The history given was that the patient had always been well until March, 1889, when one evening she fell from a flight of steps, having missed her footing in the dark, and was caught up by a man who was passing. Thinking she was attacked by him she shook herself loose and ran home, where she fell on the floor weeping. From that moment she became ill. During the next few days she had pains in the head and eyes, then increased sensitiveness to light and wind, with lachrymation. Some weeks later pains were felt and noises heard in the ears; painful twitches in the mouth and gums; rheumatic pains in the back, shoulders, and extremities; and paræsthesia, mostly in the finger and toe joints. Headache was often severe and succeeded by vomiting, which gave temporary relief. News of the sudden death of a brother made matters worse, and the free intervals became shorter and more rare. The patient and her relations now noticed that the face was becoming gradually larger and altered in its form; and at the same time her feet and hands increased in size. The typical signs and symptoms of acromegaly then developed.

Another case is recorded by Robert Ruttle[2], which exhibited the following characteristics: (1,) The stoppage of catamenia; (2,) The enlargement of extremities without pain; (3,) Pain in the head (vertex without enlargement); (4,) The eye symptoms: R, atrophy; L, temporal hemianopsia; (5,) The abnormal sensitiveness to sound; (6,) The tenderness and sensitiveness over her cervical and upper dorsal regions.

In a typical case of acromegaly, Bignami[2] found atrophy of the optic papilla, exophthalmos, and diminution in power of some of the muscles of the eyeball. He referred these affections to an osseous hypertrophy of the base of the skull. In the same individual he found, especially in the hands and feet, a diminution in the sense of localization. A careful examination of the tactile sensibility showed that in the hands and feet the greater diameter of the tactile area was in the transverse direction—that is, the opposite of that which obtains in the normal condition. The reason of this is, according to Bignami, to be found in the fact that in acromegaly the increase of the

extremity takes place in the transverse direction, and is explained by Vierordt's law that the direction of the greatest diameter of the tactile area coincides with the direction in which the increase of the organ occurs.

REFERENCES.—[1]"Practitioner," March, 1891, and Nov., 1890. [2]"British Med. Jour.," March 28, 1891.

ACTINOMYCOSIS. *T. Colcott Fox, M.B.*

In a case of actinomycosis of the right cheek in a woman of twenty-five years the growth was successfully dealt with by Gautier's system of **Electro-Chemical Treatment.** Platinum needles were inserted into the nodules and, once a minute, some drops of a solution of iodide of potassium (1 in 10) were injected. The needles being connected with two poles of a battery, the solution is decomposed by a current into the nascent bodies—iodine and potash. The treatment was applied under chloroform in sittings of twenty days each, with eight days' interval, with a strength of 50 milliampères. Anderson in a case incised the skin, dissected back a flap, scraped away a quantity of fungating tissue and diseased bone and muscle. The patient made an uninterrupted recovery.

REFERENCES.—Darier and Gautier, "Ann. de Derm. et de Syph.," No. 6, June, 1891 ; A. R. Anderson, "Lancet," Nov. 14, 1891.

ACTINOMYCOSIS OF THE LUNG. *F. de Havilland Hall, M.D.*

Dr. Hodenpyl[1] has found records of thirty-four cases of this disease. The following summary of the symptoms, lesions, treatment, and certain points in diagnosis is based upon these cases.

Pulmonary actinomycosis may be defined as a chronic infectious disease of the lung, depending upon the presence of actinomyces. It may further be characterized as being attended with fever, cough, with more or less profuse, often fœtid, expectoration, pain in the affected side, progressive emaciation, a well-marked tendency to the secondary involvement of adjacent parts, and to the formation of secondary abscesses (actinomycotic) elsewhere. It generally terminates fatally.

As a rule, and perhaps in all cases, the living germ is first taken into the bronchi, and from thence gains access to the parenchyma of the lung.

The ages of the patients varied from nine to sixty-three years ; although the majority of the cases were in young adults, and a somewhat larger proportion were in males than in females.

Fever was present in nearly all cases. Usually it was one of the first symptoms, but sometimes it did not come on until later in the course of the disease ; it was constant, but of an irregular type, and

seemed dependent upon the extent and nature of the lesions, and later by the development of pus-forming centres.

Cough and Expectoration.—Of special importance, and usually the first symptom to be complained of, is cough. It lasts throughout, generally becoming more and more severe. The expectoration varies a good deal, according to the severity of the cough. It was profuse in many cases, often spoken of as fœtid, occasionally bloody, and sometimes contained actinomyces.

In Canali's unique case, that of a girl who suffered for a considerable time from bronchitis, the only symptoms were cough, with profuse fœtid expectoration containing actinomyces. The patient, who greatly improved during the summer months, continued without additional symptoms for several years, until she finally passed from observation.

Pain over the affected side was present in all but the above-mentioned case, and was, as a rule, constant and severe.

Attacks of sweating were mentioned in several cases.

Hæmoptyses were not observed, although the sputum was sometimes tinged with blood. Emaciation was gradual, and often became extreme; sometimes the patient passed into the so-called "typhoid state"; or, as happened in many, other organs became involved, or extensive abscesses formed beneath the skin, which, opening externally, left fistulæ into the lung. As a result of the excessive production of pus, a condition described as chronic pyæmia and attended with chills sometimes ensued.

Physical signs were very variable, according to the condition of the lung in the different cases. There were always signs of bronchitis, usually of consolidation, sometimes of cavities, or of empyema.

Duration.—The average duration was ten months; the shortest case lasted four months and the longest was still living after a duration of several years.

Prognosis.—Of the thirty-four cases, all have died except two. Canali's case, already referred to, was lost sight of, and Soltmann's case was pronounced cured (?) after four years.

Diagnosis.—In eighteen cases the disease was positively diagnosticated during life by the detection of actinomyces. In nine cases they were found in the sputum. The remaining nine cases were diagnosticated on finding the bacterium in pus obtained from abscesses which communicated with the lung. In the cases in which the diagnosis was not made, no mention was made of the sputum being examined; moreover, we are not informed, in the nine cases in which the sputum

showed actinomyces, at which period of the disease they first made their appearance. We are, therefore, not in a position at present to determine the earliest time during the course of the disease when we may reasonably expect to find the germ in the sputum of pulmonary actinomycosis.

From the fact that the bacterium has been found in sputum in large numbers, and also that it is commonly found in the bronchi after death, it is to be presumed that actinomyces are likely to be contained in the sputum during life, although in certain instances, possibly, not until the disease is considerably advanced. Inasmuch as actinomyces are the only positive evidence of actinomycosis, and since the disease in the lung may often resemble, clinically, certain forms of pulmonary tuberculosis, and, further, since it may be of more frequent occurrence than is at present generally supposed, it is advisable, in the routine examinations of sputa for tubercle bacilli, to further determine the presence of actinomyces.

REFERENCE.—"Medical Record" (New York), Dec. 13, 1890.

ADENOID VEGETATIONS (Post-Nasal).

P. Watson Williams, M.D., Lond.

We have little to add in the way of treatment of this very common condition in children, for all laryngologists are of one opinion on this point—they must be removed. But their *complete* removal, which is so essential for a permanent cure, is not by any means such a simple matter as we are sometimes led to believe, and the many new forms of adenotomes and curettes that are introduced show most clearly that an all round satisfactory instrument that can be used without anæsthetics is yet to be invented.

Dr. Holden's[1] curette (*Fig.* 2) has the advantage of being a flexible curette, shaped at the tip like the finger-nail, which by its elasticity adapts itself to the pharyngeal vault and can be rapidly used even on a rebellious child without the aid of an anæsthetic. In his experience it

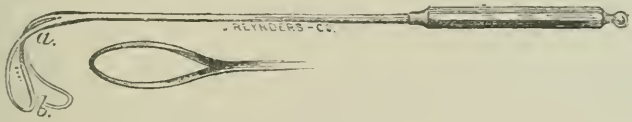


Fig. 2.

is applicable to the majority of cases, especially of the fimbriated and cushion-like varieties. It may be superfluous to say that there are exceptional instances where Major's adenotome, as modified by Delavan, the cautery loop, or the forceps of Lowenberg or Hooper, may

be necessary, but in some cases this simple device has saved much time and annoyance.

Dr. Bryan[2] calls attention to the naso-pharyngeal scissors (*Fig.* 3) recently devised by Dr. F. C. Raynor, of Brooklyn, for the removal of hypertrophied lymphoid in the vault of the pharynx, and to a slight improvement that has been made in this instrument.

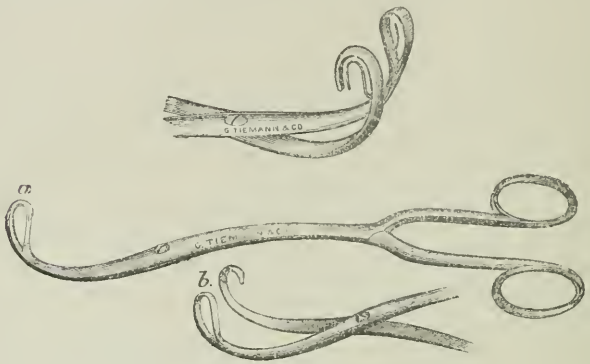


Fig. 3.

Owing to the large fenestra in the male blade (*b*,), the excised portion almost invariably falls out of the grasp of the instrument, much to the annoyance of the operator ; and when operating on a patient in the sitting posture there is great danger of the mass falling into the larynx. To overcome this defect, Tiemann & Co. have added two small bars, one to each blade, which hold the excised portion firmly within the grasp of the instrument, so that it can be easily removed from the post-nasal space before operating again. This slight addition to the instrument will be readily appreciated by referring to the accompanying woodcuts.

REFERENCES.—[1]"Med. Record," Nov. 8, 1890 ; [2]"New York Med. Jour.," Jan. 3, 1891.

AINHUM. (See "Orthopædics.")

ALBUMINURIA.

Synopsis.—(Vol. 1891, p. 7.) **Aerocomia Sclerocarpa.**

ALCOHOLISM.

Synopsis.—(Vol. 1891, p. 96.) In acute cases, **Rest** in bed, **Emetics, Tea, Coffee,** and **Acetate of Ammonia.** **Enemata of Coffee** with **Friction** and **Massage** to avert collapse. Use of Stomach Pump or Faucher's tube. **Capsicum** and **Cherry Laurel** in coma cases. **Opium** and **Chloral** in large doses for insomnia, cramps and nightmare of "absinthism." In

Delirium Tremens, Saline purgatives, Warm Baths, and Laudanum, Beef Tea and Milk. In chronic cases, Milk diet; open-air exercise, Quinine and Tonics; Strychnine in heroic doses.

Nux Moschata as sedative in Delirium Tremens, gr. 10 to 60 (p. 43.)

ALOPECIA AREATA. *T. Colcott Fox, M.B.*

The etiology of this malady continues to be keenly debated, but so far remains unsolved. An interesting discussion took place at the Birmingham meeting of the British Medical Association in 1890, and those who wish to master the subject cannot do better than refer to the 2nd French edition of Kaposi's "Lectures on Diseases of the Skin." No one has yet succeeded in isolating an organism and proving its etiological importance in this disease, but there is a very strong body of clinical evidence tending to show the contagious nature of at any rate, some phases of the malady. Crocker concludes indeed that tinea tonsurans and alopecia areata may be interchangeable conditions in children, and are probably phases of one malady, whilst in adults we practically meet with only the areata alopecia form. Hutchinson also favours this view. The principles of treatment, however, remain practically unchanged. Besnier counsels us to examine each patient carefully, and then to regulate his hygiene, diet, medication, according to his age, position, material needs, and the indications drawn from the state of his organs and functions. Direct stimulant treatment has always been *the* method of cure, though the irritants used are sometimes also parasiticides; but Besnier asserts from his own experience that the cure is quite as rapid when the irritants are not parasiticides. He recommends that all the hair, if possible, or a zone around a patch, should be kept close cut, and that a "zone of protection" should be kept epilated. Then the parasiticide or excitant of the suspended hair producing function can be applied. "Every topical irritant capable of determining a slight congestion of the derma, and an epidermitis of the type of eczematic rubefaction, or even of simple vesication, can be employed indifferently." For **Acetic Acid** he claims the most certain action on the hair follicle and pigment formation. He orders usually slight friction with the following applications: **Hydrate of Chloral,** 5 grammes; **Officinal Ether,** 25 grammes; **Crystallizing Acetic Acid,** 1 to 5 grammes. Pure acetic acid is somewhat painful and energetic, and should be applied only by the doctor. The scalp should be carefully watched, and at the earliest sign new patches must be dealt with. The essential point is to maintain, during the whole treatment, a slight but permanent irritation. The scalp generally may be washed with stimulant or parasiticide soap, and then anointed with an antiseptic oily fluid. Those who believe in a possi-

bility of infection will, of course, adopt measures, as in ringworm, to prevent auto-infection or the spread of the disease to others.

Chatelain used with success for limited circumscribed patches **Iodized Collodion** (1 to 30), the application to be repeated once every week.

Mouty claims great success from intradermic injection of **Corrosive Sublimate** in water round each patch (5 to 6 drops of a 2 to 500 preparation).

In recent cases Morrow applies every few days chrysarobin (8 to 10 per cent.), with or without salicylic acid (2 to 5 per cent.) in traumaticin or lard. In extensive cases the doctor should apply two or three times weekly acetic acid and chloroform or ether in equal parts, or graduated according to circumstances, and in the intervals the patient can use the following: Oil of eucalyptus, oil of turpentine, āā ʒss; crude petroleum, ʒj; alcohol, ʒj, and massage for five minutes. At a later stage he replaces the oil by sulphur ointment, with or without resorcin.

Crocker comes to the conclusion that a large proportion of cases in adults which are termed alopecia areata are cases of bald tinea tonsurans, and Hutchinson also believes it is, "in *fact* a sort of modified ringworm, or at any rate a sequel of that disease."

Illingworth advises the application of biniodide of mercury in solution of iodide of sodium as a powerfully penetrating germicidal agent. An anonymous writer recommends rubbing in carbolic lotion (ʒj to ʒij of water) with a piece of boric wool, and then painting with acet. lyttæ. If this does irritate he paints with iodine twice a week. Later on he applies ung. creasoti each morning.

REFERENCES.—Kaposi's "Lectures on the Path. and Treat. of Skin Diseases," 2nd French edition; Crocker, "Lancet," Feb. 28, 1891; Chatelain, "Rév. Gen. de Thérap.," Dec. 31, 1890; Mouty, "Ann. de Derm. et de Syph.," No. v., 1891; Morrow, "Jour. Cut. and Gen. Urin. Dis.," Oct. 18, 1891; Hutchinson "Archives of Surgery," Oct., 1890.

Synopsis.—(Vol. 1890, p. 120.) Cut the hair short, apply a mild sinapism or rubefacient to scalp, and rub in the following every five days cautiously: ℞ Acid. Acet., Chloroformi āā q.s. M. Also wash the scalp every morning and apply ℞ Acid. Salicyl. gr. xv, Sulph. Præcip. ʒijss, Vaselini ʒv, M. Avoid fatty applications. Local Stimulation is best (p. 121).

Lassar's treatment: For six or eight weeks, lather the scalp with strong Tar soap for ten minutes daily, removing this with an irrigator, using first, lukewarm, and then cold water. Dry the scalp thoroughly, and apply ℞ Sol. Bichloride of Mercury, 8 grs. to 5 ozs.; Glycerine, ʒij ʒv; Cologne Water, ʒij ʒv, M. Then rub the scalp dry with Alcohol 90%, to which Naphthol ½% is added. The scalp now being free from any fat, apply ℞ Salicylic Acid,

30 grs.; Tincture of Benzoin, 45 grs.; Neat's Foot Oil, ʒiij to ʒij. In very obstinate cases try ℞ Carbolic Acid, 15 grs.; Sublimed Sulphur, 75 grs.; fat from a horse's neck, ʒjss, M. ℞ Pilocarpin. Mur. 30 grs.; Vaseline, ʒv; Lanolin, ʒijss; Oil of Lavender, 25 drops; M. ℞ Pilocarpin. Mur. 30 grs.; Quinine Mur. 60 grs.; Præcip. Sulphur, ʒijss; Balsam of Peru, ʒv; Ox Marrow, ʒiij, M. Wash and dry the scalp before applying, and remove the ointment soon with soap, and reapply it. **Tar Baths** are also useful. **Increase** fats and phosphates in diet by fresh butter, cream, etc., with milk between meals. Free and persevering use of **Strychnine**, with **Phosphoric Acid** internally. As parasiticides: **Bichloride of Mercury** strong enough to moderately stimulate skin, or **Ung. Veratriæ**, grs. v to x to ʒj. Stimulating applications, as **Croton Oil**, strong **Carbolic Acid Lotions**, **Acetum Cantharidis**, **Capsicum**, etc., are useful.

(Vol. 1891, p. 96.) Application of **Tinder** soaked in **Croton Oil**, causing vesication; **Electricity**. Epilation of borders. Washing daily with **Berger's Tar Soap**, drying the scalp and applying ℞ Sol. Hydrarg. Perch. (0·5) 150·8; Glycerini, Sp. Cologn. āā 50, M. Then rubbing dry with **Absolute Alcohol** and ½% **Naphthol**, and finally with ℞ Ac. Salicyl. 2·0; Tinc. Benzoin 3·0; Ol. Pedum Tauri 100·0, M.

AMBLYOPIA (Tobacco and Alcoholic).

Synopsis.—(Vol. 1891, p. 99.) **Nitrite of Amyl. Strychnine** or **Pilocarpine** subcutaneously or internally, with **Iodide of Potassium.**

AMENORRHŒA.

Synopsis.—(Vol. 1890, p. 122.) **Iron, Permanganate of Potash**, gr. j to ij t.d.s. or **Peroxide of Manganese**, gr. ij t.d.s., and **Iodide of Potassium**, in increasing doses, gr. v to x are best. **Abdominal Massage** and **Faradism** are useful adjuncts. **Tinct. Pulsatillæ**, ♏iv t.d.s. in primary amenorrhœa. **Tinct. Aconite**, ♏j hourly, in acute arrest with pyrexia. **Iodide of Potassium** and **Salines** in chronic arrest with severe frontal congestive headache. **Ol. Morrh.** and **Parrish's Food** in strumous subjects. **Change of Air** and mental rest when due to mental overstrain. **Tinct. Caulophylli**, ♏v to xx, alone or with **Pulsatilla**. In obstinate cases, a spiral wire stem **Pessary.**

AMETROPIA. (See "Eye.")

ANÆMIA AND CHLOROSIS.

Synopsis.—(Vol. 1890, p. 123.) (1,) **Aperients** for constipation; (2,) **Iron**, *e.g.*, **Blaud's Pills.** ℞ Ferr. Sulph. gr. ijss; Pot. Carb. gr. ijss; Sacchari, gr. j; Tragacanth, gr. ½; Ft. Pil. j. Sig. ij ter. in die post cib.; (3,) **Regulate Dress**, avoiding all constriction; (4,) Regular **out-of-door Exercise. Enemata** and **Abdominal Massage** for fæcal accumulation. **Iodide of Potash** and **Purgative Salts** (Mist. Alba) in lead poisoning. **Mercury** in small doses in syphilis. **Filix Mas** or **Kamala** for tæniæ. **Arsenic** in increasing doses, *e.g.*, Liq. Arsen. ♏iij to xv, in pernicious anæmia. **Arsenic** is also useful where iron fails, if there is no gastric irritation.

(Vol. 1891, p. 99.) Defibrinated **Ox blood** 5 oz. injected per rectum twice daily for a week. In pernicious anæmia, **Arsenica** and **Beta-Naphthol. Rubus Chamæmorus** infusion 5 or 6 tea-spoonfuls daily as diuretic in Chloro-anæmia with œdema (p. 50).

ANEURYSM. *Frank W. Jackson, M.D., New York.*

The treatment of aneurysms which are not susceptible of the ordinary operative interference is discussed in an elaborate paper by

Dr. Wm. MacEwen[1]. He recommends occlusion of the vessel by the formation of *white thrombi*. This is effected by irritating the walls of the aneurysm in such a way as to induce infiltration of the parietes with leucocytes, and a segregation of them from the blood-stream at the point of irritation. The irritation should be just sufficient to set up reparative exudation, and must not exceed this. It is better so to act upon the wall of the aneurysm as to produce either a uniform irritation over its whole surface or to stimulate as many points in its interior as possible. The method of procedure is very simple. The instrument employed is a pin of sufficient length to completely transfix the aneurysm, and to permit of manipulation within it. Its calibre should be as fine as possible, the strength being only sufficient to penetrate the coat of the aneurysm and the intervening tissues. Antiseptic precautions must be carefully employed. The aseptic pin is passed into the sac and through its cavity until it comes in contact with the opposite wall. It ought to touch and no more. One of two methods may be employed: either to move the pin over the surface of the inner wall, so as to irritate its surface, or to allow the impulse of the blood-current playing on the very thin pin to effect the same object. If the wall penetrated by the pin on introduction be dense, the former method will be preferable, as the force of the blood-current will not be sufficient to move the thin pin while it is firmly grasped by the dense wall.

After acting thus for about ten minutes at one part, the point of the pin, without being removed from the sac, ought to be shifted to another spot, and so on, until the greater portion of the internal surface opposite the point of entrance has been touched. A single insertion of the pin may be sufficient to enable the point of the instrument to come in contact with the greater part of the internal surface of the aneurysm, but in some cases several punctures may be necessary. When the pin is in the aneurysm it is surrounded by aseptic gauze, or moistened with an antiseptic solution. After the pin is withdrawn an antiseptic dressing is applied, which ought to remain for several days. The period a pin may remain in an aneurysmal sac without doing damage is, perhaps, dependent upon the individual and the state of the aneurysm, but it ought never to exceed forty-eight hours. It would seem probable that all the effects desired can be effected within a few hours.

Dr. MacEwen reports four cases treated by this method. In three of them a cure of the aneurysm was effected.

REFERENCE.—[1] "Lancet," Nov. 22, 1890.

F. S. Eve, F.R.C.S.

Ligature of the Carotid and Subclavian Arteries for Aneurysm at the Root of the Neck.—In the present position of this operation a careful statistical inquiry as to its results is a welcome addition to our knowledge. This has been made by Dr. R. Winslow[1], who has constructed tables, largely from the statistics of Wyeth (1881) and Rosenstern (1886). He finds that the *simultaneous* distal ligation of the right common carotid and the right subclavian arteries has been performed much more frequently than any other operation for the cure of these aneurysms, and with a much larger proportion of recoveries, 72¾ per cent., as compared with 54½ in the *consecutive* distal ligation of the same vessels. Distal deligation of the right common carotid alone gives a percentage of recoveries of only 33⅓, whilst the ligation of the right subclavian alone, which has only been performed five times, gives a proportion of 60 per cent. of recoveries. The left common carotid artery has been tied thirteen times for aortic aneurysm, with a proportion of recoveries of nearly 77 per cent., and with very great improvement in the patients, but this operation is only applicable to aneurysms affecting the summit and left extremity of the arch of the aorta. If the cases are analyzed more carefully it is found that the results have been materially modified by the introduction of antiseptic methods. As it is impossible to state definitely in every case whether the operation was conducted upon antiseptic principles or not, those cases which occurred before 1871, will be referred to as pre-antiseptic, and those since as antiseptic operations, and we find a most remarkable difference in the behaviour of the two classes of cases. In the antiseptic simultaneous ligations of the right carotid and subclavian, the recoveries amount to 77⅓ per cent.; in the pre-antiseptic cases only 33⅓ per cent. recovered. In the antiseptic distal ligation of the right common carotid artery, alone, the proportion of recoveries was 66⅔ per cent.; in the pre-antiseptic, 20¾ per cent. In the antiseptic distal ligation of the left common carotid, 77¾ per cent. recovered; in the pre-antiseptic, 50 per cent. The best permanent results are also found to belong to the simultaneous distal ligation ot the common carotid and subclavian of the right side. In conclusion it may be stated that the simultaneous distal ligation of the right common carotid and right subclavian artery, in its third portion, has not, *per se*, a very high rate of mortality, when performed antiseptically, with an absorbable ligature; and that in a large proportion of cases great benefit will follow, whilst in a small proportion of cases a permanent cure will be obtained.

REFERENCE.—"Ann. of Surg.," May, 1891.

ANEURYSM (Thoracic).

Synopsis.—(Vol. 1891, p. 104.) Injection of Extract of **Lecithin.** **Rest.** **Iodide of Potassium.** **Ergot.**

ANGINA PECTORIS.

Synopsis.—(Vol. 1890, p. 134.) **Nitrite of Amyl** gives rapid effects; **Nitro-Glycerine** is slower but more lasting. **Spirit of Nitrous Ether** is often useful. **Belladonna, Stramonium,** and **Hyoscyamus** are useful, and **Tobacco** and **Lobelia** in certain cases. **Chloral, Chloroform,** and Ether may be used if others are inadmissible.

(Vol. 1891, p. 14.) **Cactus Grandiflorus,** 20 drop doses of tincture.

ANGIOKERATOMA. *T. Colcott Fox, M.B.*

This is an uncommon affection of the skin, which has attracted attention in recent years. It commences on the hands and feet of children as red specks, which become slightly prominent and surrounded by little keratomata. These lesions become confluent into larger "warty" masses. The primary change is a dilatation or new growth of a blood-vessel. Patients thus affected are or have been subject to chilblains. The growths are disfiguring, and should be destroyed. Electrolysis is an excellent means.

REFERENCES.—Pringle, "Brit. Jour. of Derm.," Sept. 1890, gives a complete bibliography and two plates. Colcott Fox, "Illust. Med. News," 1889, and Mibelli, "Intern. Atlas of Rare Skin Diseases," 1889, also illustrate the disease.

ANTERIOR METATARSALGIA.

Synopsis.—(Vol. 1890, p. 135.) Introduce a convex india-rubber sole pad into the boot, as in flat-foot, but adapted to support of metatarsal heads.

ANTHRAX.

Synopsis.—(Vol. 1891, p. 109.) Subcutaneous injection of solution of **Iodoform** in **Ether** 10%.

ANUS ARTIFICIAL AND FÆCAL FISTULA.

Synopsis.—(Vol. 1890, p. 136.) Treatment: (1,) Plastic operation, freshening edges and suturing; (2,) Pressure by a truss, or strapping the granulating edges together; (3,) Application of caustic, or actual cautery, to edges of fistula; (4,) Where there is a spur: (*a*,) Depressing it by indiarubber tubing passed into upper and lower openings; (*b*,) Gradual division of spur by ligature; (*c*,) Destruction of spur by Dupuytren's enterotome; (5,) Resection and suture of intestine if all else fails.

APPENDICITIS. *A. W. Mayo Robson, F.R.C.S.*

This would seem to be the proper heading under which to discuss the forms of inflammation occurring in the neighbourhood of the cæcum, and usually known as typhlitis and perityphlitis, as there can be little doubt that inflammation of the vermiform appendix is the cause of this form of peritonitis in by far the greater number, if not in all of the cases.

During the past year a considerable number of papers on the subject have appeared in the different journals, more especially from the pens of American physicians and surgeons.

The subject may be considered most conveniently by dividing the cases into two classes : (1,) Appendicitis without suppuration, depending on ulceration or catarrh, and producing local peritonitis which has a tendency to resolution, but which is also liable to recur ; (2,) Perforating appendicitis, ending in suppuration and producing either a local abscess or diffuse peritonitis. In the second class of cases there is a consensus of opinion that surgical treatment is the only rational method.

In the former class American surgeons would seem to resort to operation more frequently than is the custom yet in England, where the majority of cases of "typhlitis" are treated medically, and with considerable success, the methods adopted being absolute rest, great care in diet, and the administration of opium, the rest and careful diet being continued until all signs of inflammation have disappeared. Where the attacks are frequently repeated, as in a case which came under the care of Dr. Griffith and myself, removal of the appendix, as suggested by Mr. Treves, is the best treatment. The patient had had about fifteen attacks before I saw her, and in January, 1891, I removed a thickened and adherent vermiform appendix distended with mucopus, the patient recovering without a bad symptom, and being afterwards entirely freed from her attacks.

In such cases of recurring appendicitis there are clearly three courses of treatment open :—

(1,) Non-operative treatment, trusting to rest, opium, and diet to bring about resolution, hoping that the existing attack may be the last.

(2,) Operation between the attacks, as suggested and first performed by Mr. F. Treves.

(3,) Operation on the second or third day of a seizure, as advised by Dr. F. S. Dennis, who discourages the removal of the appendix between the attacks, arguing that in the great majority of cases the disease does not recur, and that should it do so, removal of the appendix at an early stage of the attack is both safe and efficient.

Before deciding on any definite line of treatment, the mortality of operative measures must be weighed against the dangers of delay.

In discussing a comparatively new operation statistical evidence is often wanting, but so far as I am able to ascertain, close on thirty operations have been performed for the removal of the appendix during the quiescent stage of chronic relapsing appendicitis, and out of this number only one patient died.

I question whether the statistics of expectant treatment would yield nearly so excellent a result: the nearest approach to a statistical estimate is a report by Fitz, who estimated the mortality of perityphlitis medically treated at 11 per cent.

Laparotomy, in the early stages of acute attacks, would, I feel sure, show a much larger mortality than operation undertaken when the disease is quiescent.

Dr. John Ferguson[1], of Toronto, has during the past year made two hundred dissections of the vermiform appendix. In one hundred and twenty-three instances it had its own mesentery, and a perforation must have opened into the peritoneal cavity. In the remaining seventy-seven the appendix was so placed and covered by peritonæum that a perforation would have opened out the subperitoneal tissue.

In discussing symptoms, Mr. Treves insists on the information to be gained by rectal examination in diagnosing between trouble in the cæcum and appendix. Another sign of importance is pain in the groin, testicle, or labium from implication of the ureter[3]. I can speak with confidence of the value of Dr. McBurney's symptom, "A tender spot about two inches from the ant. sup. spine of the ilium, between it and the umbilicus[5]," in appendicitis.

Dr. E. Mansel Sympson, of Lincoln, reports three cases of typhlitis in young patients, and considers several points relating to the pathology and treatment of this affection. The seat of this inflammatory affection and its character differ, according to the author of this paper, in young and old patients, the former class generally producing the acute cases, the latter the chronic. Typhlitis in young subjects is more frequently set up by some hard lumps of fæces, or by some foreign body, such as a fruit stone or berry, lodged in the appendix. The inflammation may extend and cause localized or general peritonitis[20].

Dr. H. Einhorn has published the following conclusions, based on the records of one hundred *post-mortem* examinations in cases of peritonitis from perforation of the appendix vermiformis, made in the Munich Pathological Institute from 1854 to 1889. Cases of perforating tuberculous, enteric, and dysenteric ulcers have been excluded from this list: (1,) Perityphlitis in 91 per cent. of the cases is the result of disease of the vermiform process; (2,) Primary perforation of the cæcum occurs in only 9 per cent. of the cases; (3,) Notwithstanding the unanimous statements of all previous observers to the contrary, typhlitis and perityphlitis occur with like frequency in both sexes; (4,) Predisposition to these lesions occurs only in advanced age, not, as has generally been assumed, in youth; (5,) Perforation of

the vermiform process is very seldom caused by the presence of a foreign body, and in such instances usually by hardened and inspissated masses of fæcal matter; (6,) Perforation is favoured by deviations from the normal form and position of the vermiform process, and also by diseases of its mucous and muscular coats, due, in many instances, to an unhealthy condition of the intestinal contents; (7,) Typhlitis and perityphlitis are caused much more frequently through injury.

An unusual case of perityplitis has been pointed out by Dr. Ransom[22], who found spherules of actinomyces in the pus evacuated from an abscess in the region of the cæcum. Death occurred after eight months, and actinomycosis of the vermiform appendix was found. It is supposed that the patient swallowed a fragment of corn infected by actinomyces, and that this lodged in the vermiform appendix.

REFERENCES.—[1]Dr. John Ferguson, Anatomy of V. App.; "Int. Journ. Med. Sci.," Jan., 1891; [2]Dr. Weir, Resection of Appendix, in Chr. Relops. App., "Annals of Surg.," May, 1891; [3]Mr. Andrew Clark, "Med. Press," Feb. 18, 1891; [4]Dr. Stimson, "Annals of Surg.," April, 1891; [5]Dr. McBurney, "Annals of Surg.," April, 1891; [6]Dr. Curtis, "New York Med. Journ.," Jan. 3, 1891; [7]Dr. Chibot, "The Practitioner," April, 1891; [8]Dr. Mynter, "Annals of Surg.," April, 1891; [9]Dr. Fowler, "Annals of Surg.," April, 1891; [10]Dr. Keen, "Annals of Surg.," April, 1891; [11]Dr. Price, "Annals of Surg." May, 1891; [12]Krecke, "Deut. Zeit. f. Chir.," vol. xxx., 1890; [13]Fraenkel, Supplement "Brit. Med. Journ.," April 13, 1891; [14]Dr. Ryerson, "Brit. Med. Journ.," Aug., 1891; [15]Dr. Dennis, "Journ. de Medicine," Jan. 18, 1891; [16]Mayo Robson, "Leeds and W. R. Med. Chr. Sc.," Nov., 1891; [17]"Clinical Society Discussions," April 30 and March 7; "Lancet," 1891; see also p. 62 of March 7; [18]T. P. Terle, "Brit. Med. Journ.," Jan. 17, 1891; [19]Dr. Elliott, "Amer. Journ. Med. Sci.," June, 1891; [20]Dr. Sympson, Supplement "Brit. Med. Journ.," July 25, 1891; [21]Dr. H. Einhorne, Supplement "Brit. Med. Journ.," July 11, 1891; [22]W. H. Ransom, "Lancet," Nov. 14, 1891.

ASCITES AND GENERAL DROPSY.

Synopsis.—(Vol. 1890, p. 137.) **Milk Diet; Lactose,** 100 grammes, as diuretic; **Milk Diet** with **Tinct. of Iron, Digitalis, Squills,** and **Oil of Juniper**; or **Cinchona, Sulphuric Acid, Sulphate of Iron**; with powder of **Digitalis, Squills** and **Juniper. Calomel** with **Digitalis** in ascites due to hepatic cirrhosis. **Calomel, Faradisation** of abdominal walls in chronic ascites recommended.

(Vol. 1891). **Apocynum Cannabinum Tincture** ♏x for Dropsy due to Mitral disease (p. 9). **Cactus Grandiflorus Tincture** ♏v-xv. (p. 14).

ASTASIA-ABASIA. *Græme M. Hammond, M.D., New York.*

Dr. G. M. Hammond[1] reports a case similar to those described by Blocq under the title of astasia-abasia, or difficulty in standing and in walking, without the accompaniment of motor-paralysis. The patient could move the limbs freely while she was either in a recumbent or a sitting posture, but on attempting to stand on the right leg, or to use it in walking, her body would revolve rapidly to the right, when, after making a revolution and a half, she would sink to the floor. If she was forcibly restrained from revolving, the body would be rapidly flexed or extended on the legs as in the act of salaaming, or else the right leg would be partially flexed on the trunk, and be held there rigidly in spite of the patient's vigorous efforts to extend it. There were no disorders of sensibility, the electrical reactions were normal, the visual field and the colour-sense were unaffected, and the special senses were unimpaired. Dr. Hammond regards the condition as merely an uncommon type of hysterical condition, and recommended persistent effort on the patient's part to bring her will power to bear on the affected limb, and to exercise the limb both actively and passively. To best obtain the proper exercise he recommended the use of the bicycle.

REFERENCE.—[1] "New York Med. Journ.," Nov. 29, 1890.

ASTHMA. *F. de Havilland Hall, M.D.*

The relation of asthma to other diseases was most ably treated by Dr. Samuel West[1], in a paper read as an introduction to the discussion, at the Medical Society, on Nov. 10th, 1890.

(1,) *Affections of the Lungs* naturally offer themselves first of all for our consideration, but it may be stated at once that asthma stands in no definite relation to any disease of the lungs, except that if it be long continued it is likely to lead to permanent emphysema and chronic bronchitis. In childhood it is often started by an attack of bronchitis or measles, and the same may happen in the adult. With acute affections of either the lung or pleura, the liability to asthma usually disappears for the time, to return when convalescence is established. Phthisical patients very rarely suffer from spasmodic asthma, and if an asthmatic patient becomes phthisical, an event which is by no means common, the asthma usually disappears.

(2,) *Diseases of the Heart.*—More or less of permanent dyspnœa is the rule with all forms of *morbus cordis*, and paroxysmal attacks are by no means rare. The paroxysms may be due to sudden failure of the heart, to acute œdema of the lung, to infarction or embolism, but they differ entirely from an asthmatic paroxysm. True cardiac

asthma is extremely rare, perhaps the rarest of all forms, as it is also the most difficult to treat and the most doubtful of prognosis.

Dr. West does not think that asthma has any real relation to angina pectoris.

(3,) *Affections of the Stomach.*—Asthma is very rarely found in connexion with any organic disease of the stomach, but rather with functional derangement only ; and as in most instances the paroxysm does not come on until an hour or two after a meal, it is due probably rather to the circulation in the blood of some irritating product of imperfect digestion than to any actual irritation in the stomach itself.

In the discussion which followed the reading of the paper, the writer mentioned a case in which emetics gave relief when other remedies had failed. In this instance it seems that direct irritation of the stomach was the cause of the attack.

(4,) *Affections of the Kidney.*—Paroxysms of dyspnœa, again, are by no means uncommon in these affections, and may be due to many causes—to failure of a hypertrophied heart, to acute or chronic œdema of the lung, or to uræmia : but true asthma is rare. In uræmia, respiratory disturbances of paroxysmal character are frequent, sometimes with dyspnœa and sometimes without, as in Cheyne-Stokes breathing. In most cases the attacks bear a closer relationship to those which occur in *Diabetes mellitus* than in asthma, and depend probably, like them, upon some poisonous substance circulating in the blood. At any rate, true spasmodic asthma is rare in renal disease of any kind.

(5 and 6,) *Gout and Lead Poisoning.*—We may conveniently associate with renal disease those two affections which are so commonly connected with it, namely, gout and lead poisoning, to both of which asthma has occasionally been referred.

(7,) *Affections of the Nose.*—The proof of the causal connexion between asthma and affections of the nose constitutes the chief advance which has been made in recent years in our knowledge of asthma.

Dr. Bosworth[2], of New York, is an ardent champion of the nasal origin of asthma. He makes the startling assertion that a large majority, if not all cases of asthma or vaso-motor bronchitis, as he calls it, are dependent upon some obstructive lesion in the nasal cavity. He describes forty-six cases of asthma, in all of which he found marked intra-nasal changes, and which were treated locally. Of the forty-six cases thus treated, twenty-eight were cured, twelve improved, one unimproved, and five unknown.

Recently Schmieglow[3] has published a very complete monograph,

containing not only the record of a large personal experience, but a comprehensive and critical review of the whole subject.

It is obvious in the first place that asthma is not always associated with nasal affections, and that when the two conditions concur their association *may* be purely accidental. It may also be assumed that asthma depends upon a peculiar condition of the nerve-centres, through which the paroxysms may be excited by various peripheral irritations, of which the nasal is only one among many co-ordinate groups; and lastly, that even in those cases in which local nasal disease formed the starting point of the affection, the asthma may, if of long duration, acquire as it were an independent existence, and continue after the nasal affection, its original cause, has been cured.

In those cases in which asthma stands apparently in close causal relation with nasal affections, the local affections met with have been the following: polypus, chronic rhinitis of all kinds, including even the atrophic form, growths on the septum or turbinate bones, nervous catarrh, paroxysmal sneezing, and other irritations without organic lesion.

The statistics adduced by Dr. West go far to prove a probable connexion as regards cause and effect between the two affections. The results of treatment prove the connexion in some cases conclusively.

In the discussion on the paper Dr. Semon[4] stated his belief that too much importance was attributed to nasal affections as causes of asthma. He could not distinguish between those in which treatment directed to the nose was likely to prove beneficial, and those in which it would prove ineffectual, and the latter constituted the majority. Assurances of cure after nasal treatment could not be given to patients, even where the concomitant nasal affection was most marked.

The writer mentioned that though he had had a number of cases in which relief was procured by treating co-existing disease of the nose, he had not met with a single case of complete cure.

The relation in which asthma stands to paroxysmal sneezing, paroxysmal coryza, and to hay fever may here be conveniently considered. Not only may these affections accompany asthma, but they may alternate with it.

Hay-asthma, which there is no reason to regard as a special form of asthma except so far as it is excited by a special cause, introduces hay fever into the group of allied affections, for in a given case or series of cases of hay fever there may be traced every degree from the simple summer catarrh to well-marked asthma; and if, in families with an

asthmatic history, it can be shown that sometimes the one and sometimes the other affections develop in the descendants, the proof of the pathological connection between them seems to be complete.

(8,) *Affections of the Pharynx.*—The pharynx being so much less sensitive than the nose, it might be anticipated that reflex neuroses from the pharynx would be far less common.

(9,) *Affections of the Neck and Mediastinum.*—Cases of this kind in which asthmatic attacks occur are usually referred to irritation of the trunk of the pneumogastric, either in the neck or within the thorax. Thus asthma might be met with in connection with goitre, new growth, or enlarged glands in the neck; and with aneurysm, mediastinal tumour, or enlarged glands within the thorax. It is often impossible to exclude the effects of pressure and to be sure that the attacks are really asthmatic at all.

Eustace Smith, for example, refers asthma in children in the great majority of cases to the pressure of enlarged bronchial glands, and in this way explains the frequent improvement or cure by cod-liver oil, iron, and residence at the sea-side.

(10,) *Affections of the Skin.*—There are two reasons for the interest excited by the question whether there be any relation between asthma and affections of the skin; the one because of the well-known effect of skin-irritation or skin shock upon the respiratory centres, the other because there can be traced, in many of the writings on this subject, an under-current of belief that the asthmatic paroxysm is in these cases due to the development in the bronchi of similar pathological conditions to those observed in the skin.

Trousseau drew attention to this connection, the class of skin affections being in his opinion chiefly of a herpetic or eczematous nature. Although Hyde Salter did not actually recognize this association, still a considerable number of the cases he records (nearly 8 per cent.) yield a history of some skin-eruption. It is quite of recent years that most of the cases have been described, and the most complete summary of them up to the date of the paper is to be found in Dr. Bulkley's article in the "British Medical Journal" of 1885[5].

Dr. Charles West says that he has never known eczema in children to be extensive and long-continued without a marked liability to asthma being associated with it. In all such cases we must remember how extremely common eczema is in early life, and how great the chances are in any case of asthma that a history of eczema might be obtained if it were specially enquired into.

Dr. Bowes[6] records a remarkable case in which a man previously

in perfect health developed suddenly the symptoms of a severe attack of asthma half-an-hour after taking breakfast. Accompanying the dyspnœa an urticarial erythema appeared, first on the face, then on the forearms, and gradually spread over the trunk limbs. The dyspnœa began to subside in about twenty minutes, and ceased in three-quarters of an hour, when the patient vomited, the rhonchi ceasing concomitantly. The attack was not accompanied or followed by any expectoration, and the axillary temperature was sub-normal throughout.

Dr. West makes a careful examination of the various forms of skin affections which are said to be associated with asthma, and comes to the conclusion that the evidence upon which the assumed connection between asthma and affections of the skin rests is very slight. In most cases the association is obviously accidental ; in others, both affections were probably the joint effects of some common cause ; and the instances in which a causal connection might be even conceived to exist are so few that they throw no light upon the nature of the disease.

(11,) *Affections of the Nervous System.*—There are no instances in which asthma stands in anything more than an accidental relation with any recognized disease of the spinal cord or medulla. Nor are there any cases in which asthma has been proved to depend upon any actual gross intra-cranial lesion. Still, a sufficient number of cases have been recorded in which asthma has been met with in various forms of cerebral affection to make this association more than a mere coincidence.

From the consideration of the affections with which asthma is associated, it is easy and natural to turn to the *exciting causes.*

There is hardly anything which has not in one case or another excited an attack of asthma, and the resemblance of asthma to epilepsy in this respect is so close that the conclusion seems almost irresistible that asthma, like epilepsy, depends upon an unstable condition of the nerve centres in which the explosion may be excited reflexly by a great variety of stimuli. Where this centre is to be sought for, whether in the medulla or brain and whether the instability depends upon an organic or simply upon a functional lesion, future investigations alone can determine.

Assuming the existence of such a centre, the paroxysm might of course originate in it spontaneously, but it would be much more likely to be excited by some irritation reaching it from above or below, a view which could be represented in the diagrammatic form (*Fig.* 4) shown upon the opposite page.

(*a*,) *From the centre itself.*— In most cases excited by the circulation through it of blood containing some irritating impurity. It seems almost necessary to assume this origin for those cases in which asthma develops in connection with dyspepsia, but not till an hour or two after the taking of food. This is also the probable explanation of asthma occurring in the course of uræmia, though it must not be overlooked that alterations in the tension of the vessels or other changes in the circulation may possibly play their part in this affection.

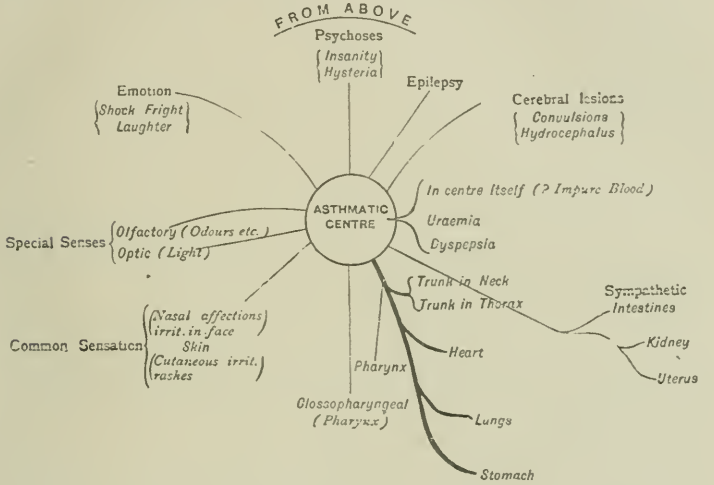


Fig. 4.

(*b*,) *From above.*—To this category would belong (α) All those cases which are provoked by emotions, whether of pleasure or pain, by fright or shock, and by immoderate laughter ; (β) Those connected with various cerebral neuroses, *e.g.*, insanity, hysteria, hemicrania, etc., convulsions and epilepsy ; (γ) Those associated with gross disease, *e.g.*, hydrocephalus.

(*c*,) *From below.*—(*a*) Through the special sense nerves. The optic is as rare a source of irritation as the olfactory is common. Bright light often brings on an attack of sneezing and sometimes an attack of asthma, but the cases more commonly quoted depend rather upon an absence of light than upon an excess, some patients being unable to sleep without a light, and if a paroxysm comes on in the dark, finding relief on lighting a candle.

In connection with the olfactory we find attacks brought on by

odours of nearly every kind, the smell of violets or the rose, of coffee, camphor, or even roast hare; animal emanations from cat, dog, guinea-pig, and horse; pungent smells or fumes as of pitch or burning sulphur, fog, and mist; in some cases by dusts of almost any kind, in others only by the dust of some special substance, of which the most remarkable is ipecacuanha; the fluff of fur or feathers. And here is the natural place to mention the effect of the pollen of certain grasses to which the attacks of hay-asthma have been referred.

Many of the nasal irritations are, however, connected rather with the fifth nerve than with the olfactory. It is the fifth probably which is at fault where the attacks commence with nasal symptoms, *e.g.*, sneezing, itching of the nose, and coryza, and again where organic affections of the nose are present, such as polypus or rhinitis.

(β) Through the pneumogastric nerve—either by irritation of its trunk in the neck, or within the thorax, or through almost any of its branches, except perhaps the superior laryngeal: the pharyngeal, as in the cases quoted of pharyngeal polypus; the pulmonary, as after the inhalation of dusts, fog or mist, or after bronchial catarrh; the gastric, where the attack stands in relation to dyspepsia or to some special idiosyncrasy in regard of certain articles of food, *e.g.*, beer, sweets, etc.; and lastly, the cardiac.

(γ) Through the sympathetic—from the intestines, as with worms and constipation; from the kidneys, though uræmia generally, as already stated, belongs to another category; and from the uterus or generative organs.

(δ) Through the cutaneous nerves—as, for example, by exposure of the face to a cold wind, by cold feet, by the application of cold, or even of heat (*e.g.*, poultice) to the skin. Here may be mentioned the remarkable case of a lady in whom the slightest puff of cold air on the back of the neck was sufficient to produce the attack at any time. Lastly, in this connection the relation of asthma to certain skin affections may be noted.

Brissaud[7] has collected a considerable amount of evidence to show that the true asthmatic may be regarded as a neurotic, and hence the removal of the supposed exciting cause (*e.g.*, nasal polypi), can hardly be expected to be curative. He arrives at the conclusion that asthma is only one manifestation of the general neuro-pathic tendency, and that an inheritance of nervous disorder is a main disposing factor in the affection. Schmiegelord[8] regards asthma as a "bulbar neurosis" which may develop after debilitating circumstances, or may be excited by reflex irritations. Treatment therefore requires to be directed to combat both these conditions.

TREATMENT.—No important suggestions for the relief of asthma have been made since our last volume was issued. The writer of this article has directed attention to the good effects of **Nitro-glycerin** in some cases of asthma. He gives 1 minim of the alcoholic solution in a ½ ounce of dilute chloroform water, to be taken immediately the paroxysm comes on, and to be repeated in half-an-hour or an hour according to the urgency of the symptoms.[9]

Pearce[10] recommends **Nitrite of Sodium** as the best therapeutic measure against asthma, using the drug as a rule without adjuvants. In cases in which there is insomnia he combines it with hyoscyamus. He recommends the drug to be administered in doses of 3 to 4 grains.

Mr. Spencer Watson[11] records a case of asthma of eighteen years' duration with polypi and hypertrophy of the turbinated bodies. The nostrils were obstructed, but not completely. Mucous crusts covered the turbinates. The thorax was very emphysematous. The free application of a 20 per cent. solution of cocaine to both nostrils gave temporary relief. Clearance was effected by means of the snare and (under chloroform) of the ring-knife. The great success of the case is attributed by Watson to the sudden blow to the morbid habit following the very thorough clearance effected by the ring-knife, as compared with successive snaring operations.

REFERENCES.—[1] "The Practitioner," March, 1891; [2]"Diseases of the Nose and Throat," p. 244; [3]"Asthma," London, 1890; [4]"Brit. Med. Journ.," vol. ii., 1890, p. 1123; [5]Ibid., vol. ii., 1885, p. 954; [6]Ibid., vol. i., 1891, p. 1282; [7]"Rev. de Méd.," December, 1890; [8]"Asthma," London, 1890; [9]"Westminster Hospital Reports," vol. vi., p. 47; [10]"Practitioner," March, 1891, p. 220; [11]"Lancet," vol. i., 1891, p. 427.

Synopsis.—(Vol. 1890, p. 138.) **Lobeline** hypodermically, gr. $\frac{2}{3}$ to vj daily for adults, gr. $\frac{1}{6}$ to $\frac{2}{3}$ for children. **Menthol**, 20% solution in olive oil, inhaled to relieve asthmatic attacks.

(Vol. 1891, p. 112.) **Iodide of Potassium** increased to 30, 40 or more grains, thrice daily. **Amyl Nitrite** and **Nitro-glycerin** for bronchial spasm. ℞ Sodium Nitrite, gr. 3 to 5; Tinct or Succus Hyoscy. ʒj, M. Frequently repeated. **Arsenic** and **Strychnine** in paralytic cases. **Strychnine** gr. $\frac{1}{60}$, with **Atropine** gr. $\frac{1}{150}$ subcutaneously, increasing to gr. $\frac{1}{30}$ and gr. $\frac{1}{100}$ respectively. **Morphine** for paroxysms. **Grindelia** acts as antispasmodic, and is safer than Lobelia. **Coffee**, inhalation of fumes of **Ammonium Bromide**. **Cannabis Indica Tincture**, ♏10 in Spasmodic Asthma (p. 18); **Euphorbia Pilulifera**, Fluid Extract ♏30 to 60 every four hours in Hay Asthma (p. 28), **Naregamia Alata Tincture**, gtt. 16 to 50 (p. 42).

BASEDOW'S DISEASE. (See "Exophthalmic Goître.")

BERI-BERI, TROPICAL ANÆMIA, and ANCYLOSTOMIASIS.

Synopsis.—(Vol. 1890, p. 140.) **Thymol**, powdered, three doses of 30 grs. each at intervals of two hours to dislodge the ancylostoma; 180 grs. in four doses have been used at intervals of four hours.

BLADDER.

E. Hurry Fenwick, F.R.C.S.

Calculus.—This year's literature is especially rich in the experience of our Indian confrères of the various methods of treating stone in the bladder. Surgeon-Major Keegan[1] (the innovator of this operation) records a hundred and sixty litholapaxies in male children and boys with a mortality of seven (4·37 per cent.). Four if not five of these deaths were the result of extensive organic disease of the kidneys, and in only one out of the seven was the fatal issue directly connected with the operation. In the face of the information compiled in Surgeon-Major Keegan's table it is perfectly futile for those who have had no practical experience of litholapaxy in male children and boys to maintain that this operation is only applicable to the treatment of calculi of small or medium size. Out of eighty-six male children and boys admitted into the Indore Hospital during the past three years suffering from stone in the bladder, seventy-nine were treated by litholapaxy by Surgeon-Major Keegan. He gives his opinion of the position of litholapaxy in the following words :—

"I have no hesitation in stating that it is the best surgical operation for the great majority of the calculi the surgeon meets with in male children and boys, once he has rendered himself thoroughly familiar with the use of the lithotrite. Should he aspire to performing this operation widely and successfully in male children and boys, he must provide himself with a large assortment of fully fenestrated lithotrites of small size, made from the best steel which money can purchase by thoroughly reliable workmen. His set of lithotrites—all fully fenestrated—should range from Nos. 4 or 5 at the bend of the blades to No. 10 at the bend of the blades (English scale), and his evacuating catheters or cannulæ should all be fitted with serviceable stylets. But when I advocate litholapaxy as being the best operation, in my opinion, for the great majority of cases of stone occurring in male children and boys, I do so with a very important reservation, viz., that no one should attempt to perform it in boys until he has first gained some practical experience of it in adult males. The surgeon who meets with cases of stone only at rare intervals during his career will be acting more wisely if he adheres to lateral lithotomy or supra-pubic cystotomy. It is his misfortune, and not his fault, that he has not been afforded many opportunities of gaining a practical familiarity with the use of the lithotrite. But, on the other hand, he must not flatter himself that because he has performed a successful lateral lithotomy or a supra-pubic cystotomy for a stone weighing thirty grains on a boy of ten years of age, into whose urethra a No. 8 lithotrite would have readily passed, that that boy has been especially

lucky in coming under his care. For he may rest assured that the boy would have been luckier still had he been entrusted in the first instance to the care of one skilled in performing litholapaxy."

Surgeon-Major Freyer[2], in an exhaustive and valuable report of his own experience in dealing with stone in the bladder, sums up as follows:—

"(1,) Litholapaxy is almost universally applicable to all cases of vesical calculus, as is clearly shown by the fact that I have been enabled to perform this operation in one hundred and sixty-five out of my latest one hundred and sixty-eight cases of stone, occurring in both sexes and in all ages and conditions. During 1890, one hundred and six patients suffering from stone came under my treatment, and litholapaxy was performed in one and all of these, with one death.

(2,) The dangers which we anticipated from the extension of litholapaxy to the case of male children were purely imaginary and had no foundation in fact, as is fully proved by my having now performed this operation in one hundred and fifteen males below the age of puberty without a death, and in all with complete success."

Surgeon-Major Gimlette[3] reports forty successful cases of litholapaxy in boys and male children.

Surgeon Cunningham[4] records a series of one hundred and two cases of stone in the bladder removed by litholapaxy since January, 1890, without a death, in the Amritsar and Mooltán civil hospitals and the dispensaries in the Mooltán district.

Rupture of the Bladder during Litholapaxy.—Mr. Edmund Owen[5] reported a fatal case of rupture of a boy's bladder during the evacuation of the fragments of a stone. The boy was about five years old, and after the operation was practically finished a final washing was performed. During this an ominous gurgling was heard, and an unmistakable wave ascended behind the anterior abdominal wall. All resistance, moreover, to the flow from the evacuator ceased; and on detaching the wash-bottle, only a trifling amount of water escaped by the tube. There was no doubt but that the bladder had given way, and that the best chance of the boy's recovery probably lay in opening the abdomen and sewing up the rent. A three-inch incision was made in the linea alba above the pubes. The peritonæum was opened and a search was made for the collapsed bladder in the depths of the pelvis, nothing being seen of the bladder until the peritonæum had been traversed. The rent, however, was eventually discovered in front of the peritonæum, and at the root of the urachus. It was also made out that the irrigation-fluid which had escaped from the bladder had infiltrated itself along the subperitoneal connective tissue, none of

it having entered the peritoneal cavity. The rent in the bladder—which was about one-eighth of an inch long—was sutured, and the abdominal wound was closed. It was deemed expedient to secure absolute rest for the bladder by a perineal drain. The boy died of collapse in eight hours. Mr. Owen attributed the calamity to the large size of the wash-bottle used.

Sacculated Calculi (compare next article on page 118).—Mr. Buckston Browne[6] draws especial attention to the importance of searching post-prostatic (trigonal) pouches in cases of obscure bladder disease. He considers that the trigonal pouch is "the chief cause of error in searching for stone and of imperfection in its removal, whether by the lithotrite or the knife." The trigonal pouch is often of extraordinary depth. If the patient is supposed to be lying down, it may be said to consist of the trigone of the bladder pushed down between the enlarged and projecting prostate in front, and a thickened and firm interureteral ridge behind. Where there is much intra-vesical prostatic projection, the pouch may literally be roofed over by this prostatic outgrowth. Calculi in this pouch cause much pain, since the trigone of the bladder has a much larger nervous supply than any other portion. Lying as the pouch does in front of and below the orifices of ureters, it is a perfectly contrived trap for the catching and retention of renal calculi upon their entrance into the bladder, and it will readily be seen how favourably the stones are there placed for growth. The paper is illustrated by a very valuable and interesting series of successful cases, in which trigonal stones were encountered and removed. Mr. Browne has designed a sound with a beak like a flat bladed lithotrite. "The broad flat beak is easily reversed when in the bladder, and it slips with greater facility than the beak of an ordinary round-ended sound under the projecting lobe of the prostate, allowing the space under it to be as fully explored as is possible by any instrument passed in by the natural passage."

Suprapubic Cystotomy.—Dr. Weir[7], of New York, in recording a case of suprapubic lithotomy and prostatectomy relates that smart oozing followed the snipping off of the prostate median lobe. It was partly relieved by taking out the rectal distending bag, often a cause of the continued bleeding, but it was only completely controlled after the finger had felt the internal urethral orifice to be free from any further protuberances, by packing the bladder firmly with iodoform gauze in such a way that the pressure of the ordinary dressings should be carried backward and downward to the prostate through the mass purposely left in the bladder. Dr. Weir has resorted to this expedient of a direct compress in vesical hæmorrhage after suprapubic cysto-

tomy with removal of a neoplasm in three instances with a satisfactory result. In twenty-four hours the gauze is usually withdrawn, having not only checked the hæmorrhage, but kept the bladder comparatively aseptic and free from odour.

The late Mr. A. F. McGill[8], of Leeds, recorded two cases in which a vesico-vaginal fistula was repaired through a suprapubic wound in the bladder as was first suggested by Prof. Trendelenberg. The first case was one of epithelioma, involving the floor of the urethra for its whole length, as well as part of the anterior vaginal wall and base of the bladder. The opening made in removing the growth was so large that, though he succeeded in bringing the edges of the hole which he had formed into apposition, the wound subsequently gaped, and a large vesico-vaginal fistula resulted. The chief interest in this case lies in the fact that in five weeks, without further treatment, owing to the efficient suprapubic drainage, the fistula entirely and spontaneously closed. The second case was an ordinary one following labour, in which the operation was perfectly satisfactory. Mr. McGill urged the value of the Trendelenberg position. (*Vide* "Annual," 1890, p. 151). At Leeds they use Verity's patent epicycloidal window holder, which is firm and self-fixing, for this purpose, and find it convenient. In private practice the patient can be inverted over the top of an ordinary small iron beadstead. The value of the transverse or cross incision is thus summed up by Mr. McGill: "It is true that with the longitudinal incision the view obtained of the interior of the bladder is not quite so good, and that manipulation in its interior is not so easy as with the transverse. On the other hand, my experience of eleven cases of transverse suprapubic cystotomy has shown me that healing is, as a rule, much slower with a transverse than with a longitudinal incision. In cases where a suprapubic urinal must be worn, the transverse incision is certainly inadmissible. The recti, if undivided, form a sort of sphincter and grip the tube introduced into the bladder, thus preventing the escape of urine by its side. If these muscles are divided urine will escape by the side of the tube, thus making the urinal comparatively useless. These remarks apply not only to cases of vesico-vaginal fistula, but to all cases of suprapubic cystotomy."

REFERENCES.—[1] "Lancet," Oct. 4, 1890, compare "Annual," 1890, "Lancet," March 17 and 21, 1891; [2] "Brit. Med. Jour.," May 9, 1891; [3] "Brit. Med. Jour.," Ibid.; [4] "Brit. Med. Jour.," Ibid.; [5] "Lancet," March 21, 1891; [6] "Lancet," April 18, 1891, p. 867; [7] "New York Med. Jour.," May 30, 1891; [8] "Lancet," Nov. 8, 1890.

BLADDER (Electric Illumination of). *E. Hurry Fenwick, F.R.C.S.*

The 'Electric Illumination of the Urinary Bladder.—The Nitze method has been proved by many unbiassed observers in different countries to be of much value in the diagnosis, prognosis and treatment of obscure urinary diseases. As it has been allowed on all hands to be a great stride forward in the progress of urinary surgery it will be as well to devote a few pages of the present volume to a brief estimate of the advance gained by the use of this method. In the "Annual" for 1889 the technique of electric cystoscopy was given, and in the issue of 1890 the need for unremitting practice was insisted on in order that the visual fallacies or pitfalls which await the explorer in the protean changes of the mucous membrane under the varying conditions of relaxation, congestion, extravasation and infiltration might be recognized. These fallacies were also enumerated and described. Six cases, excerpted from a series of some hundreds, will be first given in order to illustrate the value of the method in actual practice, and then certain conclusions based upon the systematic examination of a very large number of healthy and diseased bladders will be added, in order to show the educational control which the method exerts upon diagnosis, and the great influence which it has had upon our knowledge and treatment of urinary disease.

In health (*Plate I, Fig. A*) the entire surface of the bladder, with the exception of the trigone, resembles the retina, being of a bright yellowish white, marked here and there with small vascular twigs. The openings of the ureters are easily found, and the interlacing muscle trabeculæ are visible as bands sharply defined on the pale background. The unbroken glistening epithelial surface reflects the light, which is thus intensified so that the features of the normal bladder can be viewed as if they were seen in direct sunlight. After an attack of cystitis the colour of the background is, however, more or less changed. It now varies from a fawn to a dull red colour according to the stage and the intensity of the inflammation. The amount of light which is visible is moreover lessened, for the denuded or blurred epithelial surface absorbs much of the illumination, and the observer must therefore pay extra attention to the translucency of medium and the brilliancy of his light.

Renal Hæmorrhage.—In order to illustrate the value of an inspection of the orifices of the ureters in symptomless hæmaturia and pyuria the following case is given. *Plate I, Fig. B*, represents a jet of bright renal blood which was seen issuing from the ureter of a patient, æt. fifty-four, who had been sent me by Mr. W. G. Hall two and a half months after the onset of a profuse hæmaturia. I extirpated the kidney, and on making a

Fig. A.—Normal Bladder.

Fig. B.—Arterial Blood issuing from ureteral orifice. Profuse, symptomless Hæmaturia, from Carcinoma Renalis of three months duration. Nephrectomy. (Under Dr. Hall.)

section of the gland I discovered a small monkey-nut sized growth fungating into the pelvis. This was proved to be the apex of a carcinomatous degeneration which occupied the middle of the anterior half of the kidney. It did not approach the surface, and was quite unfeelable and unrecognizable by means of the finger whilst the organ was *in situ*.

Litholapaxy.—Plate II, Fig. C, illustrates the use of the cystoscope in the detection of that opprobrium of litholapaxy "the last fragment." The sharp edged fragment of the shell of a crushed stone is seen lying on a dull, congested mucous membrane. The mucous membrane in cases of calculus is not infrequently very spongy, and "last" fragments get spiked between the swollen folds. They thus escape the lithotrite and evacuator, and remain undisturbed to form the nucleus of a fresh calculus. In chronic cases, where the bladder is very pouched and stones have been recurrent, I make it a rule to examine a week after the crushing before declaring the patient "free" from stone. Frequently while crushing stone in a "pouched" bladder the cystoscope is of use in enabling one to direct the eye of the catheter opposite the opening of the pouch and to swirl out the stony *débris* which has collected there, and which otherwise would remain undisturbed by the ordinary suction stream. Thus, in a case recently brought by Dr. Abbott, of Preston, I was able, after crushing part of a pouched stone, to sweep out and evacuate the remainder from the deep recess by noting with the cystoscope the exact position of the sac mouth and by guiding the eye of the evacuating catheter into it.

Encysted Stone.[1]*—Plate II. Fig. D*, represents a pouch with four small stones in it, piled one on the top of the other. The sac was situated on the left side of the bladder of a patient, aged sixty, who had been sent to me by Mr. Debenham. Symptoms of an enlarged prostate, complicated with stone, had been present for many months. I sounded the patient on four separate occasions—with and without ether—but without result. Finally I inserted the cystoscope and saw the pile of small concretions lodged deep in a sac. Guiding a small-jawed lithotrite to the mouth of the pouch I edged the beak in, seized and pulled out the calculi, and crushed them. He recovered completely, and I examined him a year after and found the sac had contracted greatly, and that he was free from stone.

Tuberculosis.—Plate III. Fig. E, (6 oz. distention) represents a tubercular ulceration on the posterior wall of the bladder of a young man sent me by Dr. Gristock. The symptoms were only of a few weeks' duration, and were very characteristic of *stone* in the bladder. The ulcers were small, punched out, and had vivid red margins; they were

situated on a dull red base of infiltrated mucous membrane. The patient rapidly became phthisical.

Tumours.—Plate III, Fig. F. To the left is represented a single frond of a pure villous growth which was seen on the left floor of the bladder of a male patient, aged forty-four, brought to me by Dr. Sutton, of Sittingbourne. It was easily removed by the perineal route. To the right of the picture is shown the tip of a lobule of a deeply cleft sessile small epithelioma which was seen springing from the posterior wall of the bladder of a male, aged fifty-six, sent me by Dr. Travers Stubbs. The growth was first seen five weeks after the onset of a painless hæmaturia, and the diagnosis of malignancy was given, and an operation was not advised. The patient lived in comparative comfort for two years, and died with the entire true pelvis filled with soft growth. These few cases will serve to show that the electric cystoscope is often of real value in the diagnosis of obscure urinary disease. Moreover, by its means the knowledge of the cause of the disorder is arrived at without a cutting operation. The vivid picture painted by Sir Henry Thompson in 1884 will gradually become, I submit, less and less authoritative. In detailing his method of digital exploration of the bladder to ascertain the cause of obscure disease he says, "There are few occasions, I confess, which for me have excited a more lively interest than the moment at which my finger enters the bladder, the condition of which has been the theme of keen enquiry and speculation for some months or even for years before. Almost certainly at that moment the cause is revealed."[2] But it will be also seen that a successful cystoscopy directs our treatment with judgment and turns it from hap-hazard channels into safer and more surgical grooves, or arrests our hand from needless and often disastrous interference.

The electric cystoscope has also been used for educational purposes. The progress of the ordinary and easily diagnosable diseases of the bladder has been carefully watched, and the causes of special symptoms arising in their course have been thus determined. This insight cannot fail to have a decided influence in augmenting or correcting our knowledge of the routine diseases of the bladder and kidney. Some of the conclusions arrived at are as follows :—

Surgical Renal Disease.—The dangers of performing nephrectomy without some investigation of the presence and working capacity of the companion gland are obvious, but the difficulties of obtaining any correct estimate of the renal power which will remain after ablation of the diseased organ are avowedly great. Cystoscopy of the ureteral orifices removes much of the difficulty. The efflux establishes at once the presence of a working kidney. The sluggishness or rapid-

Fig. C.—Last fragment of a litholapaxy—mucous membrane congested from operation. (Under Mr. Wainwright of Folkestone.)

Fig. D.—Encysted multiple stones—four only are shown. Patient had been sounded six times negatively. Seven small phosphate stones were discovered packed in a pouch. They were removed by a child's lithotrite. (Under Dr. Debenham.) No recurrence of symptoms.

ity with which the jets succeed each other marks a slow or active secretion, and the absence or presence of irritation in the pelvis (?). The strength of the jet gives some indication of the health of the ureter, of its dilatation or otherwise. The colour of the jet, whether it be clear, muddy, or bloody, testifies to the normal or abnormal condition of the secretion. The kidney has been more than once removed or explored on the sole evidence of the stream from the ureter *(vide supra)*. This will be especially valuable in early carcinoma or tuberculosis of the kidney, for statistics show that all interference is useless in these conditions unless it be in the very earliest stages. The ureteral orifice, moreover, becomes implicated by descending changes from the pelvis of the kidney. The shape and appearance, therefore, of its orifice are not infrequently an index to the change in the corresponding pelvis and ureter. More especially is this the case in scrofulosis.

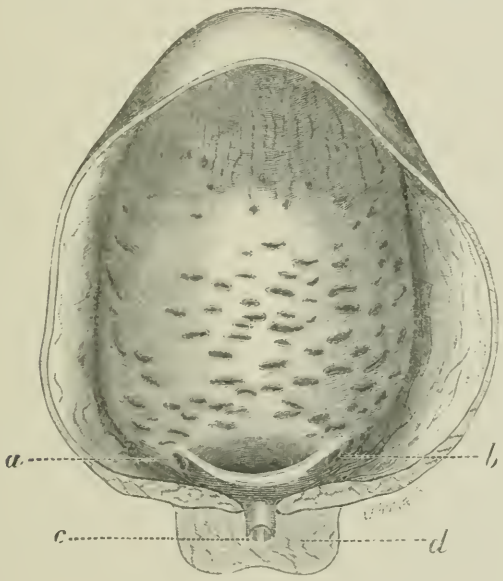


Fig. 5.

Bladder Conformation.—A natural ledge, formed by the inter-ureteral bar—the base line of the trigone—is often seen to be well developed even in healthy bladders (a, b, *Fig.* 5). The weakest part of the bladder is apparently immediately behind this line, for in those which have had to overcome even a slight obstruction in urination

there is a more or less gutter-shaped depression of the entire wall apparent in this position. Lodged behind this ledge and in this gutter may be seen the smaller stones. Fasciculation and dimpling are not uncommon in healthy bladders.

Calculi.—Stones in the bladder may be sometimes missed, on sounding, from a variety of causes which are demonstrable by the cystoscope. A small stone can be completely or partially engulfed in the approximated swollen folds of chronically inflamed mucous membrane. These folds can be seen in bladders which contain at the time of examination 4 ounces ; when the bladder is distended to 8 ounces or 10 ounces the stones drop on to the base. Medium-sized stones (1 to 2 drachms in weight) are often lodged behind the inter-ureteral bar, and may be seen partially sunk in heaped-up swollen mucous membrane. Some stones are seen completely covered with flocculent mucus or with blood-clot. All such may be overlooked in sounding on account of the circum- or superjacent soft material. Stones in pouches (sacculated stones) are rare. They are missed for these reasons : (1,) The orifice of the sac is narrowed in incomplete distention ; (2,) The orifice is further encroached upon when the mucous membrane lining the mouth is swollen and gelatinous with inflammation. It is therefore recommended in those cases which exhibit marked symptoms of stone and where the sound has failed to detect any concretion : (1,) That the patient be sent to bed for a week's absolute rest ; (2,) That sedatives to the mucous membrane be exhibited for some days previous to again sounding for stone in order to reduce the swelling of the surface ; (3,) That the bladder be fully distended with urine or with boroglyceride solution ; (4,) That the neighbourhood of the ureteral orifices be carefully searched with the point of the beak of the sound ; (5,) If this fails to elicit the cause of the trouble that the cystoscope be employed. The electric cystoscope in some of these cases has shown me very clearly the cause of the recurrence of stone after litholapaxy. Not infrequently I[1] have seen a thin shell or crust of the calculus remaining adherent in some depression or in a pouch of the mucous membrane after the operation of crushing had been considered complete. These shells or crusts form nuclei for the regrowth of the stone. The diseased surface ought to be treated by means of topical injections in the same way as the urethra, for the cystoscopist can always guide his guarded brush to the place where he has seen the application to have been needed.

Hæmaturia, (a,) Symptomless.—Symptomless hæmaturia occurring in adults under forty-five years of age, without residual urine being present, is usually of renal origin, or due to an early stage of some

form of growth springing from a part of the bladder away from the urethral orifice (usually from the posterior wall in the neighbourhood of the ureteral openings). It is a fallacy to believe that all bright symptomless hæmaturia originates in the bladder.

(b.) Hæmaturia with Symptoms, such as Penile Pain and Frequency of Micturition.—In the young, up to the age of twenty-five, the bleeding, if it be preceded by pain in the penis and frequency of micturition, is usually due to ulceration of the bladder—tubercular, scrofulous, or catarrhal—*if calculus be excluded.* [cp. Ulceration.] Darkish hæmaturia in males over fifty, if 2 oz. and upwards of residual urine be present, may be due to stone, enlarged prostate, growth or atony. The bleeding in all is increased by exercise, but *pain* and frequency is perhaps only *markedly* increased by exercise if stone be present or coexist. If the presence of calculus and residual urine are negatived, and the stream is strong and full, the prognosis is grave, for the question of soft growth has to be entertained. The only old fashioned rule which the cystoscope has proved to be reliable for indicating the source of any given hæmaturia is, "The appearance of blood at the finish of the micturition of clear urine denotes a vesical or a prostatic origin."

Ulceration of the Bladder.—It is perhaps hardly realized by the profession that a large proportion of cases complaining of obscure pains in the perinæum and penis accompanied by frequency of micturition and hæmaturia are ulcerations of the posterior wall of the bladder. Such cases in the young adult simulate stone in the bladder very closely, and the patient is sounded time after time without any different opinion being arrived at than a negative search. The cystoscope shows the ulcerations at once, and appropriate treatment can be promptly adopted. Some of these ulcerations are scrofulous, others appear to be merely catarrhal, for I have known them last for two or three years without extending or evoking other disease. A certain proportion of them are tubercular, and these usually run a more or less characteristic course. The catarrhal and scrofulotic ulcers evince, perhaps, a greater tendency than the latter to become encrusted with lime phosphate, so that ultimately a scale of cretaceous material remains overlying the ulcer and keeps up a constant irritation, and as often as not deludes an unskilful examiner into the belief that he is dealing with adherent or encysted stone. Such cases exhibit symptoms which are out of all proportion to the size or depth of the ulcer, and remind me forcibly in this respect of anal fissures. It is more than probable that to this class belonged the cases encountered by Sir Henry Thompson, and reported by him as "Digital exploration, nothing found except a

scale of phosphatic matter adherent to bladder."[2] Such cases are greatly benefited by lactic acid injections, ½ per cent. to 3 per cent., given daily, or by scraping. It might be supposed that pellucid urine would exclude the presence of ulcerations of the bladder. This is not always so. I have seen deep ulcers with apparently clear urine. There is a near connection between these ulcerations and tuberculosis. Such ulcerations are easier seen than felt by the operation of digital exploration of the bladder.

Tuberculosis.—There is no disease of the urinary organs capable of such accurate mimicry as tuberculosis. There is hardly a common or well known disease of the tract that it does not simulate at one time or other of its progress. Bearing this in mind the practitioner should acquaint himself with the family history, and examine the urine for bacillus if the diagnosis remains obscure. The straining, frequency and pain on micturition observed in tubercular *renal* affections are not always due, as is taught, to reflex conditions. In many cases such symptoms are explained by great swelling of the mucous membrane seen around the orifice of the bladder. This causes slight obstructive atony, and it may be induced by the direct irritation of the urine or by the implication of the subjacent prostate. The bladder appears to be most often the origin of primary urinary tuberculosis.

Tumours.—Carcinomata are the most common. Villous papillomata are rarer. Pedunculation is not a criterion of the nature of the tumour. Although only 3 per cent. of museum carcinomata are pedicled, yet in the early stages of the softer forms of bladder cancerous tumours, pedunculation, or subsessility, is not uncommon. Pedunculation is, perhaps, relatively commoner in female bladders. This being so, the earlier the examination and operation are undertaken the greater the chance of the successful removal of pedicled carcinomata. Very many carcinomata have shreddy necrotic surfaces, which may be mistaken for villous growths. The onset symptom is, in a large majority of cases, a hæmaturia. This has no relation to benignancy or malignancy as is taught, but depends upon the delicate texture of the growth. The appearance of the blood does not mark the *birth* of a growth, but is due to some traumatism of a pre-existing tumour or some degenerative change of its surface.

The frequency of micturition and pain in vesical neoplasms depend usually, in the earlier stages, on part of the growth obstructing or floating into the urethral orifice and plugging the outlet ; thus slight atony, with some residual urine, is not uncommon in all forms of vesical growth. The oscillations in the severity of the symptoms of a

Fig. E.—Verg early stage of tubercular ulceration of Bladder. (Under Dr. Gristock.)

Fig. F.—To the left is a leaflet of a true villous growth, with minute vessel in centre. (Under Dr. Sutton of Sittingbourne.) To the right a blood red leaflet of a villous covered Carcinoma. (Under Dr. Squire of Birmingham.)

A compound picture taken from two cases.

patient suffering from vesical growth are due (as in ulceration and stone) to transient flushes of localized cystitis.

The prognosis in carcinoma depends mainly upon the amount of implication of the wall of the bladder, but also upon the position of the primary growth, whether it be on the posterior wall or near one of the three orifices of the bladder. At the urethral orifice the disease kills quickly; the soft variety situated on the posterior wall takes about two years for completion. The most common situation for primary growth is in the neighbourhood of the ureteral orifices. Much needless operative interference with bladder tumours can be prevented by cystoscopy, and the best method for attacking the growth (the choice of the suprapubic or perineal routes) is settled also by such an examination.[3]

REFERENCES.—[1] Compare other cases, "Med. Times and Gazette," author, Sept. 24, 1890, vol. ci., p. 301. [2] Sir Henry Thompson, "Tumours of the Bladder," 1884, page 30. [3] Author, "Brit. Med. Journal," Oct. 18, 1890.

BOILS.

Synopsis.—(Vol. 1891, p. 12.) Arsenic Sulphide, gr. $\frac{1}{100}$. Menthol, 20% solution as application for furunculosis of external auditory meatus (p. 39).

BONE GRAFTING. *F. S. Eve, F.R.C.S.*

The method of filling up cavities or solutions of continuity in bones with decalcified bone chips, introduced by Senn, has been successfully practised by Mr. A. G. Miller. He filled up a large cavity in the head of the tibia. A piece of the rib of an ox was used, being first scraped and then decalcified in a weak solution of hydrochloric acid. After cleansing, it was placed for forty-eight hours in a carbolic-acid solution, 1 to 20, then removed, and cut into small pieces. During the scraping out of the cavity in the knee, preparatory to the grafting, a number of small pieces of bone were removed. These were placed in a solution of boric acid for use later in the operation. The cavity was then stuffed with the decalcified-bone shavings, the pieces of fresh bone being added last. The cavity thus filled was about two inches in diameter. Granulation and healing took place rapidly; the only pieces of bone that became necrosed were from the patient's own body. Miller is convinced, from his observation of this case, that the healing of large bone cavities, the result of injury or disease, is greatly facilitated by stuffing them with decalcified-bone chips, that these are superior to fresh bone, and that fresh bone not only is of no use, but actually hinders the process of granulation.

REFERENCE.—"Lancet." Sep. 20, 1890.

BRAIN (Surgery of). *F. S. Eve, F.R.C.S.*

Professor V. Horsely[1] at the Berlin International Medical Congress, gave a most important address explaining his views as to the surgical treatment of the various injuries and diseases of the brain and spinal cord. His address was based upon, and illustrated by tables of cases operated on by himself, and by experiments.

(*a*,) *Depressed fractures of the skull.*—The author urges in the most emphatic manner the necessity of trephining in every such case, whether or not accompanied by an external wound of the soft parts, or by immediate symptoms of gravity. He claims that especially in children who are tolerant of external injuries of this kind, the fracture will almost certainly bring with it, not only epilepsy, but also mental defect, persistent loss of memory and general deterioration. Trephining and the elevation of the bone to its normal position, with clearing the subdural space of blood and clots, should be the invariable practice in these cases.

(*b*,) *Laceration of the brain.*—Not only in cases of compound fracture, recent or of long standing, but also in simple cases of laceration, Horsley advocates trephining, freely opening the dura, washing out clots, removing hopelessly bruised brain, the operation concluding by suture of the dura and replacement of the button of bone. He says that these measures may prevent or entirely relieve the remote and sometimes the immediate consequence of epileptic convulsions. He relates in illustration the case of a medical gentleman who sustained an extensive laceration of the brain, involving the frontal, parietal and temporal lobes. He was hemiplegic and partly unconscious for ten days, at the end of which time he suddenly, after exertion, developed most dangerous symptoms, became absolutely comatose, the respiration periodic, that is, Cheyne Stokes, etc. On trephining him freely and washing out the whole left dural sac free of blood and clots, he completely recovered, and is now practising his profession. Horsley considers that this was an instance of secondary hæmorrhage from a torn vessel.

Ordinary cerebral hæmorrhage, that is, from the lenticulostriate artery, constituting simple apoplexy. In these cases ligature of the common carotid artery should be performed, for the following reasons :

(1,) Present measures, for example, position, application of cold, bleeding, counter-irritation to the legs, etc., can in no wise be considered as in any way able to check the hæmorrhage from the injured vessel.

(2,) The remote consequences, namely, permanent hemiplegia, even if death itself does not ensue, vary directly with the number of fibres

torn through by the hæmorrhage ; it is, therefore, absolutely incumbent upon us to, under all circumstances, stop the bleeding if possible.

(3,) This can be effected either by arrest of the carotid stream, or by ligature of, or pressure upon, the bleeding point.

(4,) To effect the latter a dissection would have to be performed which would certainly produce more destruction than concomitant benefit.

(5,) On the other hand, compression or better, ligature of the common carotid, not only arrests the flow of blood from the lenticulostriate artery, but in a few seconds also even the flow from the middle cerebral artery, as shown by experiments on monkeys.

(6,) Aseptic ligature of the common carotid is a very simple procedure, and primary union can be ensured in a few days, and the occurrence of permanent hemiplegia, cerebral softening, etc., is only to be met with, so far as he is aware, in cases of septic operations. The dread of, and the importance ascribed to, ligature of the carotid, are, therefore, quite fictitious, and ought not to be allowed to stand in the way of the suggested procedure.

Tumours.—The author protests against the inordinate length of time during which cases of brain tumour are subjected to treatment by drugs, so that when surgical relief is finally determined upon, the patient is quite unfit to undergo it. He alludes particularly to the use of iodide and bromide of potassium, and urges that unless very notable, not merely temporary improvement is obvious after large doses have been given for six weeks, treatment by drugs should be abandoned, and exploratory operation resorted to.

Syphilitic cerebral gummata and pachymeningitis.—As regards pachymeningitis, Horsley is certain that it has a great tendency to spread, even if the original plaque be excised, while it is only moderated, not cured, by drugs. As to cerebral gumma, medicinal treatment in no wise cures, and only temporarily alleviates the trouble. For the cure of this condition, and of tuberculous nodules, excision offers the only chance for the patient.

Malignant and diffusedly growing tumours.—Even where the necessity of early operation has not been recognized, these growths can be excised with temporary and remarkable benefit to the sufferer, but with, of course, an increasing risk of death from shock in proportion to the extent of the disease and the age of the patient. In such cases Horsley proposes that the growth be thoroughly explored, and if deemed irremovable that the wound should be closed. The effects are much better than might be anticipated. Not only are the intense headache and vomiting relieved, but a most interesting arrest of the optic

neuritis occurs, a phenomenon which he has now observed repeatedly during the last five years, and which, in many cases, is a source of much amelioration to the patient from the consequent recovery of sight. Further, he has observed that the operation has conferred the additional benefit of notable prolongation of life. One patient in particular, on whom he operated nearly two years ago for gliosarcoma of the cortex, is now enjoying very good health; and it seemed as if the effect of the interference was to check for a year the progress of the growth, for the symptoms steadily improved.

To sum up, the inference is that we should operate in all cases of tumour for the sake of the relief afforded, even should it be found during the operation that cure by removal is impossible.

Focal Epilepsy.—In all cases where an initial spasm of a segment or part of the body can be detected, an operation should be done. The foci of the representation of movement of individual segments of the body, as they exist in the cortex, are now fairly well known. The procedure to be adopted in these cases is as follows: Careful examination of the case, and the observation of attacks by trained nurses and attendants having made possible (as will be the case in some cases of epilepsy) the formation of a positive opinion as to the seat of the epileptogenous disturbance, exploration of this spot should be undertaken, after a few months' trial with bromides, douches, etc. If no gross lesions are observable when the cortex is exposed, it should be stimulated with the induced current, preferably of a Du Bois-Reymond coil, furnished with one Daniell or chloride of silver cell, and with aseptic electrodes of platinum two millimètres apart. Careful observation will soon show movement of each segment.

The locality giving rise to the initial spasm should then be excised. Owing to the fact that the focus alone of the representation of one segment is thus removed, only slight and temporary paresis follows.

In a case operated upon by the author in 1885, and which he then regarded as hopeless, a most remarkable improvement and development have since taken place. Horsley does not think that a final answer can be given as to the freedom from epileptic attacks until each case has been observed for above five years, but if the attacks are only mitigated in severity, and not absolutely cured, a notable relief is afforded, of which the improvement in the mental condition is at once the clearest evidence and the most desirable result.

Athetosis.—Horsley regards this disease as a form of cortical discharge, although he acknowledges that its pathology is as yet obscure. He recently operated in an otherwise hopeless case, in which his colleague, Dr. Beevor, having detected a successive invasion of

segments by the movement commencing in the thumb, had been led to the conclusion that the affection was of cortical origin. Horsley therefore removed the focus for the representation of the movements of the thumb, with the effect of arresting the movements for about two weeks. They, however, returned, as the cortex around resumed its functional activity. It is, therefore, evident that the whole representation of a part must be removed, a course which the paralyzed state of the limb fully warrants.

General operative dangers.—The death rate of the operations performed by Horsley had been 21 per cent. These deaths he claims to have been due entirely to the hopeless conditions of extensive injury and septic meningitis, as well as the very advanced cases of cerebral tumour, in which he has operated as a *dernier ressort*, but which ought to have been treated surgically many months before. The best proof of this is that the cause of death is invariably shock, and this not from loss of blood or undue prolongation of the operation. The reproach of such a death-rate will not be removed by refusal to operate, but by an early and universal recognition of the futility of treatment by drugs.

In all other conditions the risk is nearly *nil*. The mode of union is immediate in successful cases. Since his third case he has never drained a case of primary operation, but has sutured the wound closely.

Operative treatment of diseases of the spinal cord.—Horsley has now trephined the spine (opening the theca in six cases) nineteen times with one death, which was from shock. He advises that in fracture of the spine operation without delay should be resorted to in all cases where displacement or crepitus indicates compression, and where extension directly after the injury clearly fails to reduce the deformity.

In caries of the spine, while he admits that operations in acute cases are likely to be unsuccessful, he thinks that where there is great pain, this might best be relieved and the abscess opened by trephining the spine posteriorly. In any case it does no harm, and he has seen cases advised to be let alone die in the excruciating agonies of acute compression, a state of things which is certainly a reproach.

As regards the value of the operation there can be no doubt. As an example, he cites a case in which the patient was cyanotic and obviously dying when the arches of the atlas and axis were removed with complete relief. Even where there was extensive concomitant tubercular disease in other viscera, he has seen patients actually improve after this operation.

Trephining in Jacksonian Epilepsy.—In the case of a little boy, aged twelve, who had bruised his head by a fall, without loss of consciousness, epileptiform convulsions showed themselves about a fortnight after the accident, beginning in the right hand. These grew sufficiently serious to induce M. Verchère[2] to operate; and in April, 1890, he made a large opening in the skull, over the left fissure of Rolando. The brain seemed to be under high pressure, as it readily bulged forward into the opening. Considerable improvements followed; though there were occasional fits at long intervals. These have now become very trifling, and a healthy mental state continues. In another case under M. Charcot's care, on which M. Terrier had been asked to operate, the fits had begun in the great toe, and had been followed by some paralysis. A lesion near the paracental lobule was diagnosed, and trephining done accordingly. The wound was healed by the tenth day, but there was only slight relief of the symptoms. M. Terrier, President of the Chirurgical Society of Paris, in reading a summary of twenty-one analogous cases, which have been published, found that twelve had resulted in cure, six in improvement, and three in no benefit. Such results he thought encouraging. What was the mode of action, when no part of the brain was removed as in these cases, he considered undetermined, though it was possible that in some cases at least it might be by relief of over-pressure. M. Lucas Championnière, continuing the discussion, was inclined to take a less favourable view of the results. He knew of several cases in which the operation had been followed by death, and these had not been published; and he thought that the determination of the seat of injury was too often accepted as an easy task. He instanced three cases in which the localization had been considered sufficiently distinct, and sufficiently cortical to warrant operation, but in all of which the result had been immediate death, and a cerebral condition had been found different to what had been anticipated. In the two first the lesions had been considered cortical, but there were found large tumours of the base of the brain in the one case, and of the skull in the other. In the third case M. Charcot had diagnosed a Jacksonian epilepsy, but a state of diffuse meningo-encephalitis was found after death. Still, as a surgeon M. Championnière had seen great good follow trepanning in epilepsy, due, as he thought, to the relief of intracranial pressure; and he was, as a rule, in favour of making no attempt to replace the excised bone.

Drainage of the Ventricles in Hydrocephalus.—Among other recent advances in cerebral surgery may be noted the treatment of dilatation of the lateral ventricles by drainage.

Drawing a parallel between tubercular peritonitis and meningitis Mr. Mayo Robson advocates the same treatment in the latter as in the former, namely, drainage of the lateral ventricles and subdural space; Horsley's view also coincides with this.

Mr. Robson[3] publishes a case of localized meningitis, with accumulation of fluid in the lateral ventricle successfully treated by operation.

M. A. Broca[4] reports a case of hydrocephalus in which he practised drainage of the ventricles with some amelioration of the symptoms, and with complete success so far as the operation was concerned.

The ventricles may be reached from the surface of the brain, and thanks to Professor Fraser's researches in deep cerebral topography, the central cerebral cavities can be tapped or drained with great certainty, either through the frontal lobes, so reaching the anterior cornua of the ventricles, or through the occipital lobes to reach the posterior horns, or laterally to reach the ventricle of the corresponding side at any part. For instance, the anterior part may be reached by pushing a hollow needle horizontally inwards through the posterior extremity of the second frontal convolution, the middle part may be reached through the lower end of the second parietal convulution, and the posterior part through the posterior extremity of the superior temporo-sphenoidal lobe.

M. Broca adds the notes of a fatal case, communicated to him by Dr. Thiriar, of Brussels.

A case of Ayers and Hersman was greatly improved by the operation.

Another case of hydrocephalus in a child aged two years with improvement after tapping of the ventricles is noted by Mr. Tordoff.[5] A second case reported by Mayo Robson terminated fatally. The patient was an infant who was trephined for increasing hydrocephalus following the treatment of spina bifida by Morton's injection. A rubber drainage-tube was passed into the lateral ventricle; the escape of fluid was great, and the child died in convulsions on the third day. An autopsy showed that the brain had become greatly shrunken.

Three cases operated on by Dr. W. W. Keen for the relief of effusion into the lateral ventricles were all unsuccessful. In the first a sarcoma was found in the left lobe of the cerebellum, which had compressed the straight sinus and the veins of Galen, and had encroached on the fourth ventricle.

The second patient, a boy three years and a half old, had suffered from hydrocephalus since a few months after birth.

The third was a case of tubercular meningitis with unilateral acute hydrocephalus of the left ventricle. The foramen of Monro was closed.

In the first two cases there was no evidence of sepsis, and the third child was *in extremis* at the time of operation. Of the eight cases mentioned above, four recovered from the operation, and four died. Of the four recoveries one was cured, and three improved.

Microcephalus is another morbid condition of the skull which has recently been attacked by the surgeon. Dr. W. W. Keen[6] has recently performed a modification of Lannelongue's operation for microcephalus. The patient was a female child aged four years and seven months, who two years previously had twenty-four convulsions in one day. She had been apparently healthy at birth, had been breast fed, and had begun to talk at the usual age ; but since the convulsions she had not talked, and had been losing ground. The circumference of her head was $17\frac{1}{8}$ inches ; and it looked about the size of that of a child of one year. All the sutures were closed. Her intelligence was variable ; and she was liable to "drowsy spells" with momentary loss of consciousness and falling down of the head. The operation consisted in removing a piece of bone, six and a quarter inches in length by a quarter of an inch wide, commencing just above the supra-orbital ridge and extending back nearly to the occipital bone, care being taken to avoid the longitudinal sinus. The operation was performed with the usual antiseptic precautions, and the wound was healed in five days. A long time will of course be needed before any judgment can be arrived at as to the utility of the operation.

Encephalocele.—M. A. Broca,[7] starting with the proposition that patients with encephalocele are doomed to an early death, or become idiots, recommends excision. The base of the tumour is reached by a double incision leaving two small flaps to be used for closing the wound. He condemns incision of the tumour as liable to lead to serious consequences owing to subsequent draining away of cerebro-spinal fluid ; he prefers to place a ligature around the base at the deepest point which can be reached. The substance of the encephalocele is not often a portion of the cerebrum proper but is a true tumour, and the diagnosis of the contents being impossible it is desirable to operate by excision in all cases. The age at which the operation has been performed has varied from a few days to some months, but most of the children less than one month old have died.

Mr. C. B. Keetley[8] thinks that in the vast majority of cases of depressed fracture, or of fractures which simply require cleansing and asepticising, the indication is to *avoid* making a large hole in the skull ; and then the chisel is the proper instrument for use.

Mr. W. Arbuthnot Lane[9] records a case of epilepsy following on a depressed fracture produced by forceps at birth ; after an interval of

fourteen years, the patient being then sixteen years of age, he removed the depressed bone with considerable benefit, but not complete cessation of the fits.

REFERENCES.—[1] "Brit. Med. Journ.," Dec. 6, 1890, and "Annals of Surgery," March, 1891 ; [2] "Practitioner," August 1891 ; [3] "Brit. Med. Journ.," Dec. 6, 1890 ; [4] "Rev. de Chir.," No. 1, 1891, and "Brit. Med. Journ.," Feb. 7, 1891 ; [5] "Brit. Med. Journ.," April 18, 1891, and "New York Med. Journ.," Jan. 17, 1891 ; [6] "Phila. Med. News," Nov. 29, 1890, and "Practitioner," January 1891 ; [7] Supplement, "Brit. Med. Journ.," June 20, 1891 ; [8] "Med. Press and Circular," December 31, 1890 ; [9] "Lancet," Jan. 17, 1891.

BREAST.

Synopsis.—(Vol. 1890, p. 178). For enlargement of breasts, with excess of adipose tissue, the following has been advised: ℞ Iodoformi 1 part, Vaseline 15 parts, Ol. Menth. Pip. q.s. Ft. Ung.

BRIGHT'S DISEASE.

Robert Saundby, M.D., F.R.C.P.

The important part played by all infective diseases, not only scarlatina, in the production of Bright's disease is getting more and more recognized (see Agnes Bluhm, "Deutsches Arch. f. klin. Med.," xlvii., 3 and 4, p. 193, 1891). Mannaberg[1] has met with eleven cases with streptococci in the urine. These organisms when injected into the blood of dogs and rabbits caused severe nephritis and endocarditis. Such cases he believes run a favourable course. Letzerich[2] has described a special form of acute nephritis in children, accompanied by severe gastro-intestinal symptoms, fever, and swelling of the spleen, with often rapid œdema and effusion into serous cavities, and not frequently uræmia. The urine contains abundant straight and curved bacteria, and he attributes the disease to a specific bacillus which gives rise to nephritis in rabbits. Lancereaux[3] regards arterio-sclerosis and aplasia of the vascular system as causes of certain cases of chronic nephritis.

Moussous[4] has recorded two examples of acute nephritis occurring in the course of rheumatism and associated with purpura.

Kobler[5] has described succintly the renal changes in severe cholera nostras.

Purdy[6] has studied the geographical distribution of Bright's disease in the United States, and finds it most frequent in the eastern and northern States, and least in the southern. He believes that cold and damp are the great factors in its production.

Huchard[7] has drawn attention to the morphia habit as a cause of renal disease. Levinstein has published seven such cases and Huchard has added three others, all fatal, from uræmia.

Seyournet[8] has described an infective form of albuminuria occurring in infants between the ages of eleven and sixteen months. They had been generally brought up on the bottle, and he thinks the toxic substances were generated by abnormal fermentation in the bowels. The treatment was by milk, or milk and lime water, gentle aperients, such as calomel or castor oil, and salicylate of bismuth to disinfect the bowels. Systematic massage of the lumbar regions was also employed, to relieve the congestion of the kidneys.

The treatment of uræmia by the subcutaneous injection of large quantities of sterilized serum has been carried out successfully by Bozzolo[9] in the case of a boy, aged twelve, suffering from acute nephritis, who developed convulsions, coma, and slow pulse. He was bled to 380 ccm. (12 oz.), and no improvement resulting, a litre of sterilized serum was injected into the peritoneal cavity. The convulsions became less frequent and less severe. Five hours later a second injection of a litre was made under the skin in Scarpa's triangle. The convulsions then ceased, but not the coma. Next morning the coma had disappeared. Another injection was made into the subcutaneous tissue of the right side of the thorax, and on the following day a fourth, which caused much pain. The patient afterwards continued to improve, and made an uninterrupted recovery. Other cases have been treated by the author and by Professor Silva, of Pavia, in the same way, with equally good results.

In the treatment of *Chronic Anasarca*, Grainger Stewart recommends as an adjunct to the usual means the use of careful and judicious bandaging, and kneading or rubbing the swollen parts.

REFERENCES.—[1]"Zeit. f. klin. Med.," xviii., 3 and 4, p. 223; [2]"Zeit. f. klin. Med.," xviii., 5 and 6, p. 528; [3]"Gaz. Med. de Paris," Nos. 13 and 15, 1891; [4]"Rev. Mens. des Malad. de l'Enfance," ix., p. 62, 1891; [5]"Weiner klin. Woch.," 1890, No. 88; [6]"New York Med. Journ.," Oct. 4. 1890; [7]"L'Union Med.," No. 58, 1891; [8]"Union Med. du Nord Est."; [9]"Riforma Medica," April 20, 1891.

Synopsis.—(Vol. 1890, p. 180.) **Alum**, gr. xx t.d. freely diluted, in obstinate hæmaturia. To relieve arterial tension, a 3% solution of **Nitrite of Ethyl** in absolute alcohol, with 5% **Glycerine** added; dose ℥ss. For the cardiac distress and headache of Bright's, use **Paraldehyde** in ℥ss doses, well diluted. **Morphia** hypodermically in uræmia with dilated pupils. **Pilocarpine**, hypodermically, reduced the anasarca of acute and sub-acute Bright's, using gr. $\frac{1}{6}$ twice daily at first, then daily, and finally on alternate days.

(Vol. 1891, p. 119.) **Milk Diet** with **White Meats, Fish, etc.** Large quantities of fluid in chronic form. **Digitalis, Caffeine** and **Strophanthus** (carefully watched). **Iodide of Potassium** in chronic cases, with arterio-sclerosis. Avoidance of beer and tobacco. **Hot Water** or **Vapour Baths**;

Digitalis ; Theobromine. As Cathartic, Cream of Tartar. Calomel recommended to prevent uræmic accidents. Massage instead of exercise, and in treatment of chronic dropsy.

Apocynum Cannabinum Tincture, ♏ 10, as diuretic (p. 9). Diuretin, 6 grammes daily in gramme doses (p. 26). Rubus Chamæmorus infusion, 5 or 6 teaspoonfuls daily (p. 50). Lactose, ʒiij–ivss daily (p. 36).

BROMIDROSIS.

Synopsis.—(Vol. 1890. p. 182.) Wash feet in hot water and Bland Neutral Soap, dry, and dust with ℞. Ac. Salicyl. 3·0, Talc 87·0, Powdered Starch 10·0, M. Change stockings frequently and avoid patent leather boots or indiarubber overshoes. Chromic Acid, 5 to 10% solution, applied to soles every three or four weeks, using 5% only if any skin is broken.

BROMISM (Treatment of). *T. Colcott Fox, M.B.*

Féré some time ago advised intestinal antisepsis in endeavouring to counteract the unpleasant effects of the long-continued use of the bromides. He now employs β-naphthol combined with salicylate of bismuth ; 60 grains of the former and 30 of the latter drug are given daily. Thanks to this antisepsis, he is enabled not only to continue the use of the bromides, but to increase the dose up to 200 and even 250 grains a day. The treatment is especially effective in causing the disappearance of the cutaneous manifestations of bromism. Since borax has come into use in the treatment of epilepsy, Féré has noticed that it also often caused unpleasant disturbances of the skin. He has, therefore employed the same method of intestinal antisepsis, and found it equally successful. He suggests that further experimentation may show that intestinal antisepsis will permit of the employment of many other drugs which at present are not well borne by the system.

Reference.—Féré, quoted in "New York Med. Jour.," Aug. 1, 1891.

BRONCHIECTASIS (in Young Children). *F. de Havilland Hall, M.D.*

Dr. Walter Carr[1] has made a careful clinical study of this disease. He points out that though bronchiectasis receives but scanty notice in the ordinary works on children's diseases, it is probable however that it is by no means uncommon in childhood, though during life it is undoubtedly very apt to be overlooked, the case being regarded merely as one of bronchitis—with which it is usually co-existent—or perhaps in the later stages as one of phthisis. Moreover, the supervention of bronchiectasis, though it seriously increases the gravity of the prognosis, does not, so far as we know, call for any important modification in treatment.

As regards treatment unfortunately but little can be said, beyond emphasizing the obvious importance of taking every precaution to pre-

vent any fresh catarrh, and to maintain the general health. Probably, when practicable, the placing of the patient in a suitable climate—free from damp, fog, and sudden changes of temperature—is the most urgent indication.

Prophylaxis, however, is the most important; the disease is most likely to supervene in badly-nourished delicate children, and therefore when these are attacked by bronchitis or broncho-pneumonia, we should not only treat the local disease, but also (which is of even greater importance) try to improve the general health and tissue-vitality, being especially careful not to persist too long in the use of depressant pulmonary remedies. The child will be placed in the best position for getting rid of its disease by having its general vigour increased. Thus may we hope to prevent the mischief becoming chronic, and also to ward off the danger of a relapse. We should always bear in mind the possibility of an attack of bronchitis or broncho-pneumonia, even in very young children, and particularly after measles or whooping-cough, leading—quite apart from the ever present danger of tuberculosis—to a practically incurable form of organic lung-disease, the comparative frequency of which is perhaps hardly sufficiently recognized.

REFERENCE.—[1] "The Practitioner," February, 1891.

BRONCHITIS. *F. de Havilland Hall, M.D.*

In the examination of sputum for the bacillus tuberculosis Mr. Grün had many cases of catarrhal bronchitis sent to him. In a very short time the constant presence of a bacillus of regular form and characteristic appearance became evident to him. Having thus apparently arrived at the fact that bronchitis is associated with the presence of a special bacillus, Mr. Grün made numerous experiments in order to find out what substances would arrest the free growth of the organism. Acetanilide (antifebrin) and liquor hydrargyri perchloridi when added to the tubes containing the organism gave no growth even when kept for a long period. Of all the agents experimented with, and found capable of checking the growth, **Acetanilide** alone was available for internal administration. On putting this drug to a clinical test Mr. Grün found that it possessed the power of cutting short, acute, catarrhal bronchitis in a striking and rapid manner, twenty-five consecutive cases being treated with the remedy with unvarying successfull result in arresting the disease within comparatively a few hours. To produce a beneficial effect 5 grain doses must be given at alternate hours.

REFERENCE.—"Lancet," vol. i., 1891, p. 1424.

Synopsis.—(Vol. 1890, p. 183.) **Terpene**, 10 to 60 centigrammes daily, for children from six to ten years of age, in the form of elixir, wine, pastils, or paste.

In Plastic Bronchitis: ℞ Potassii Iodidi gr. iij, Potassii Bicarb. gr. xv, Ammonii Carb. gr. iv, Vini Antimon. ♏v, Aq. ad ℥j every four hours. It does not prevent formation of false membrane, but helps the coughing of it up. The dose of Ammon. Carb. may be afterwards increased, and Squill and Senega added. **Mercurials**, inhalation of **Alkalies** (especially **Aqua Calcis**), emulsion of **Turpentine** or **Copaiba**, **Antiseptics**, **Arsenic**, etc. have been recommended. Removal to a warm, soothing climate is probably best.

Inhalation of **Oxygen** has been beneficial in capillary bronchitis of children.

(Vol. 1891, p. 121). Inhalation of fluid **Petroleum Sprays**. Inhalation of spray of warmed **Vaseline** in acute cases, also in chronic and in phthisis. **Concill.** and Fluid Extract, gtt. 10 to 15 every three or four hours in chronic forms, with scanty thick tenacious mucus (p. 23). **Gurjun Balsam**, ℥ij or gtt. 15 to 40 of emulsion as expectorant (p. 31). **Naregamia Alata Tincture**, gtt. 16 to 50 daily, for severe cough with scanty expectoration, or when sputa are thick and tenacious (p. 41). **Pineapple** juice, 8 or 10 teaspoonfuls in chronic cases (p. 47).

BRONCHO-PNEUMONIA. *Henry Dwight Chapin, M.D., New York.*

Dr. Mosny[1] arrives at the following conclusions :—

(1,) Broncho-pneumonia is an acute specific inflammation of the bronchioles and lobules which are involved.

(2,) Whatever be primary or secondary, and whatever be the lesion which has preceded, the lesions of this disease differ in the different cases only by the variations of a process which is always identical.

(3,) Only the duration of the broncho-pulmonary inflammation or the virulence of the pathogenic agent can account for differences observed in the appearance of the histological lesions.

(4,) The lesions, according to their topographical arrangement, show two distinct types ; a lobular type, due to the action of the streptococcus pyogenes and alone constituting true broncho-pneumonia, and a pseudo-lobar type, due to the pneumococcus lanceolatus of Talamon-Frænkel, which should be distinguished from broncho-pneumonia and classified with simple pneumonia, of which it is a particular form, occurring among children.

(5,) The gravity of the disease, which is almost the same for all ages, should be considered as follows : (*a*,) In the adult, owing to the rapid generalization of the pulmonary infection ; (*b*,) In children, owing to the constant presence of extensive accessory mechanical lesions, atelectasis and emphysema, which narrow the field of hæmatosis and cause death from asphyxia.

(6,) Broncho-pneumonia is epidemic and contagious. The only

way to prevent its propagation is to practise antisepsis in isolation wards for infectious diseases with which it is constantly complicated.

Dr. Wm. Hunt[2] in pneumonia applies a very thin layer of absorbent cotton over the side affected, from spinal column to sternum, and secures it with collodion smeared thoroughly over it. Thicker layers are then applied, securing them with collodion until a good padding is obtained, paying particular advantage to the edges. This makes a good, non-conductor covering for the chest.

REFERENCES.—[1] "Gen. Mens. des Mal. de l'Enf.," March, 1891; [2] "Annals Gyn. and Ped.," 1891, p. 313.

Synopsis.—(Vol. 1890, p. 185.) Use of **Ice-bag**, irrespective of the cause of the disease, the effect being most marked in very young children. Leiter's tubes may be substituted. In severe cases, two ice-bags may be placed on head, and one over the chief consolidation in lungs.

BURNS. *F. S. Eve, F.R.C.S.*

The following is the method of treatment of burns employed by Dr. Bardeleben.

The burned surface is first carefully washed with a 2 or 3 per cent. solution of carbolic acid, or a 3 per cent. solution of salicylic acid. The blisters are then opened, and the entire surface covered with subnitrate of bismuth finely powdered, and over this a layer of cotton-wool. This dressing is to be renewed as soon as it becomes at all moistened by discharges from the wound. If the burn is very extensive, an ointment of bismuth is substituted for the dry powder.

Dr. Bardeleben asserts that with this dressing cicatrization is much more rapid, and suffering much more quickly relieved than is the case with any other form of treatment.

He states that, in spite of the large quantities of bismuth which he has employed, he has never seen any symptoms of poisoning follow its use.

REFERENCES.—"Therap. Gaz.," Nov. 15, 1890; "Lyon Médicale," Sep. 14, 1890.

Synopsis.—(Vol. 1891, p. 11). **Aristol** as dusting powder.

CAISSON OR TUNNEL DISEASE.

Synopsis.—(Vol. 1891, p. 123.) To relieve pains, **Ergot** or **Morphine**, gr. $\frac{1}{4}$ to $\frac{1}{2}$. **Dry Cupping** to spine.

CANCER. *W. H. Elam, F.R.C.S., Eng.*

Increasing Prevalence.—All observers are agreed that there is an increased prevalence of cancer. How to explain this is a problem of no small magnitude, especially in the face of so much uncertainty as to the causes of cancer, and the effect of hereditary influences in this direction. With tuber-

cular disease, many of the sufferers succumb to the disease before reaching a marriageable age, and consequently do not transmit this defect. On the other hand, cancer is a disease developed late in life, long after a marriageable age, so that if there be an inherited tendency, and those with such tendency marry, there must be a constantly increasing proportion of people born with this constitutional defect. The data on which the theory of heredity rests admit of other interpretations, and from recent statistics taken by the writer, it appears that the hereditary tendency to cancer is the same, whether the patient suffer from cancer or some other disease. Hence a very considerable proportion of cases with a family history of such an affliction among the direct progenitors, cannot be said to offer sufficient evidence of inheritance. The statistics from the Registrar-General's fifty-second annual report, show that of every twenty-one men and every eight women who live to be thirty-five years, one will respectively die of cancer ; it follows, therefore, that on an average, in one of these cases either a parent or a grandparent will have died of such disease.

Two remarkable facts stand out from the same report, viz., the increase has been much greater amongst males than females, and has not been equally distributed over all periods of life, but has been regularly greater the more advanced the age.

From the year 1851 to 1860 the mortality from cancer in males in England was 195 per 1,000,000, and in females 434 per 1,000,000.

From 1871 to 1880 it was in males 315 per 1,000,000, in females 622 per 1,000,000. This is a rise of 62 per cent. in the male, and 43 per cent. in the female. On the basis of statistics for 1887, 1888, 1889, of males over thirty-five years of age, 1 in 21 would die of cancer ; of females, 1 in 12.

In the year 1889 the total number of deaths in England ascribed to cancer was 18,654 ; this gave a proportion of 643 per 1,000,000 living persons. There was clearly, therefore, a decided increase of this disease, which was not to be accounted for merely on the hypothesis that this increase in numbers had resulted from increased accuracy in making the return.

It would be of some value if one could show that the increased mortality was shared by all parts of the body. So far, however, it is clear the increase amongst men has been mainly in the mouth, tongue, and pharynx, and in women in the digestive and urinary systems.

The Specific Organism of Cancer.—In the light of recent biological research, it has not appeared improbable that cancer will be found to be due to the presence of a specific organism. Hitherto it has not been accepted as demonstrated that such an organism does exist, or

that such organisms as have been found coincident with the neoplasm had more than an accidental relationship with it.

The consideration of the experiments and observations of investigators will receive due attention, and their bearings will be discussed, in the proper place, and after briefly reviewing recent contributions to bacteriological science.

Many epitheliomata are without doubt of local origin, the precedent changes being continued irritation, causing inflammation and ulceration at the point irritated. This disease frequently affects the lower lip in man, the commissure of the lips in the horse—a part most dragged upon by the bit—and the upper lip in cats, all of these parts being greatly exposed to irritation and injury. We know since Cohnheim that when a part is subject to irritation, the small vessels become dilated, and there is a diapedesis of leucocytes from the vessels into the structures irritated. Whenever bacteria are found in any structures, these act as irritants, or secrete some material for which the leucocytes have a special liking.

In bacterial infection there is the same dilatation of the vessels and diapedesis of leucocytes as in inflammation, and it has been experimentally shown that these cells migrate most surely and actively towards the most concentrated colony of bacteria.

More recently still, Mitchininkoff has shown that these leucocytes surround the bacteria and enclose or englobe them, finally destroying them. It is by this process of "phagocytosis," of eating up the microorganisms by the cells called phagocytes, which destroys the bacteria by an intracellular digestion, that the latter are rendered innocuous. This process goes on in the formation of a tubercular mass before suppuration takes place, and by which is formed the "tumour" of inflammation of older writers.

How suppuration takes place, and whether other pathogenic microorganisms than the tubercle bacillus are necessary for this process, is not now for consideration. It is sufficient that for the present it can be shown that neoplasms, or what is practically a neoplasm, may be formed, and associated with it, or having a causal relationship with it, are pathogenic microbes, *e.g.*, tubercular nodules, syphilitic gummata, etc.

Bouchard has recently demonstrated the remarkable properties possessed by the products secreted in pathogenic microbe cultures, some acting as vaso-motor dilators, and others as vaso-motor constrictors, actions which would explain many of the physiological phenomena of tumour growth, if there be any similarity between the actions in the body and in culture mediums.

Two affections which were held to be cancer, viz., *actinomycosis* and *Paget's disease* of the breast, are now believed to be caused by a micro-organism. These can be separated and cultivated, and the disease reproduced by injections of the cultures either into the blood vessels or tissues of animals.

Dr. W. Russell has described what he terms the characteristic organisms of cancer, and which are now known as *Fuchsine bodies.*

Since Scheuerlen first described the bacilli found in cancer, many investigators have described organisms which have been met with, the majority allocating these to the class of protozoa.

Altogether no hypothesis other than that cancer is caused by an organism will meet all the requirements of the case, and although it may be stated that at present, no specific micro-organism from cancerous tumours has been cultivated, yet most pathologists are convinced that malignant tumours are due to the growth of some micro-organism, either vegetable or animal.

Cancer is found in parts most subject to injury and within reach of micro-organisms, and not infrequently a benign ulceration becomes a malignant ulceration, when it may be assumed that the phagocytic action of the surrounding cells has become subjugated by the micro-organism. When this period arrives in the progress of the disease, the baneful influence of the bacteria becomes dominant, and the morbid process assumes its specific character and passes from a local to a more or less general or constitutional disease.

That cancer in many cases, if not in all, is at one time an entirely local disease is evidenced by the fact known to all surgeons, that the disease when completely removed may not recur for many years, or never. Disease of any kind, whether cancerous or inflammatory, never occurs in an individual who has a perfect local and general resistance, that is, when the cellular elements have the power of disposing of the pathogenic irritant or products, *i.e.*, when phagocytosis is perfectly accomplished. There comes a period in the age of the individual, which may be termed the "cancer age," when the physiological character of the cells or their relation to the environment is so changed, that cancer may find all the conditions necessary for its growth. This is shown by the fact that in some cases there is metastasis, or generalization of the disease; and further where generalization appears possible, a portion of an excised cancer may be successfully translocated and engrafted (Hahn).

Cancer has been successfully engrafted and inoculated in animals (dogs and rats) that have reached the "cancer age," when similar engraftment or inoculation totally failed with young animals.

Those experimenters who have taken special care to have the conditions in the animal experimented upon the same as, or similar to the conditions in the animal from which the disease had been obtained, appear to have been successful in their endeavours to inoculate cancer. Dr. Hanau, of Zurich, has successfully transferred squamous-celled cancer from a rat with such a growth on the vulva, to a series of other rats. Wehr has transferred cancer from the vagina of a dog, to the subcutaneous tissue of the abdomen of another. Dr. Eiselberg has successfully engrafted fibro-sarcoma from one rat to another.

On the other hand, many observers have failed to obtain any transference of the disease, and in regard to the specific organisms of cancer are very sceptical. Dr. Schutz, whilst fully recognizing the appearances which have been described by several authors as occurring in cancer, does not, however, regard the bodies in question as living organisms, but thinks it far more probable that they are formed (in part at least) of red blood corpuscles, which both in carcinoma and sarcoma find their way freely into the tissues and assume various disguises, so that their origin is not easily determined. Another source of the so-called organisms depends, he asserts, on the alteration of the cells of the various tissues, which take upon themselves amœboid movement and congregate oftentimes in masses, and it is by the alteration of these masses that the so-called sporocysts are formed. So far he is of opinion that we are as far as ever from finding the true organism which produces cancer, even supposing that it exists.

Kölliker years ago found them in and amongst the tissues of the skin under healthy and diseased (not carcinomatous) conditions. In rodents these organisms are very common, and not infrequently found in large masses, especially in the liver, but also in the intestines. They react beautifully to Gram's method of staining. However, in most cases they apparently do not affect the general condition of the animal, or cause any local disturbance, histologically to be compared with carcinoma. In and between the fasciculi of the pig's muscle they are not infrequently found. Here again they apparently cause no trouble. The fuchsine bodies described by Dr. Russell as the characteristic organisms of cancer have been found in tubercular lymphatic gland, in diphtheritic tonsil, in organizing blood clot, etc.

Dr. Delepine has devoted considerable attention to the subject of psorosperms in cancer. Since Darier first described psorospermia, as existing in Paget's disease, many writers, and amongst them Mr. J. Hutchinson, jun., and Mr. Bowlby, have shown these bodies to be present. Dr. Delepine thinks that he has demonstrated their presence in many cases of epithelial tumours.

Duplay and Cazin have described coccidia as being present in some cases of cancer, but in many specimens they failed to find them.

There is one difficulty in considering cancer to be caused by a micro-organism, viz., that all secondary growths are almost exactly like the primary one. If disease occur in the liver secondary to a columnar-celled cancer of the rectum, the secondary growth is a columnar-celled cancer. It has not been disputed that cells, by some means separated from the original tumour are carried by the blood or lymph stream to the liver, and there produce a copy of the primary tumour. Do these cells in their transmigration carry with them the micro-organism? The fundamental constitution of all carcinomata is epithelial cells, and these are believed to be produced by division or some manner of increase of epithelial cells; how is this multiplication brought about? We know that bacteria act in such a manner that the number of leucocytes and phagocytes in their immediate neighbourhood become largely increased and are attracted from their normal location, to the point where the bacteria are in largest number. Is there a parallel process taking place in the pathogenesis of an epithelioma? Do the micro-organisms of cancer—if there be one—secrete some morbid matter around the epithelial cells which attracts them from their normal location, causing the interpenetration into the subjacent structures of the columns of cells we know to exist in an epithelioma?

Cancer of the Breast.—Dr. Schultess, of Zurich, has made an exhaustive study of this disease in cases met with by himself. Of these cases 98 per cent. were females. A special frequency was observed about the menopause. Neither menstruation, marriage, fertility, sexual activity, nor lactation could be found to have any etiological relationship with the disease. Mastitis was found to have been present in 14 per cent. of the cases, and a single intense trauma, in 12½ per cent. at some preceding period. The disease affected right and left breasts equally, but the upper and outer margin of the gland appeared to be the favourite location. Heredity appeared to be noted in 60 per cent.

Dr. Hubert Snow has described some novel and hitherto unsuspected phenomena in the pathology and clinical career of cancer of the breast. Hitherto unless either a tumour or fracture has occurred, the disease in the bone has entirely escaped observation. That the rare instances of fracture are caused by a secondary deposit of the disease within the marrow without palpable tumour, he has been enabled to prove by specimens in the various museums and cases met with in his own practice.

Cases of breast cancer in the female frequently become associated with so-called rheumatic pains, occurring most frequently in : (*a*,) The upper arm of the affected side ; (*b*,) The corresponding scapula ; (*c*,) The lumbar region.

Other symptoms of bone infection are : (*a*,) A slowly increasing prominence of the sternum, at a spot corresponding to the second costal articulation ; and (*b*,) An increasing sense of pain and fulness, or thickening of the upper third of the humerus on the affected side.

These symptoms in combination indicate generalization of the disease in the bone. These signs are said never to be found in atrophic cancer of the breast.

Mr. C. Heath, in a clinical lecture, reviewed the present views on the symptoms and treatment of malignant disease of the breast. He calls attention especially to the absence of glandular infection of the axilla in sarcoma as compared with carcinoma, and although this symptom has not the same diagnostic value as formerly, yet with a given large tumour of the breast and no enlargement of the axillary glands, the disease is almost sure to be sarcoma. In giving a typical case of carcinoma, Mr. Heath says a woman from thirty to fifty has a hard lump in the breast, which she accidentally discovers, sometimes accompanied by, and sometimes without, pain. If the lump be on the surface of the gland, the skin will be early affected ; but if situated deeply, the skin affection will be delayed. The nipple may be retracted, but this again will depend on the position of the disease. In addition to this, the glands in the axilla become early affected. Given the above symptoms, the diagnosis of carcinoma may safely be made. Now and again a very local mastitis may be accompanied by enlarged axillary glands, but rarely. It is much better to make an exploratory incision than to await the development of symptoms.

Mr. Heath does not always think it necessary to turn out the whole contents of the axilla, but he invariably explores it and removes all enlarged glands. He usually makes an elliptical incision parallel to the fibres of the pectoral muscle, but occasionally he supplements this by an incision at right angles to it, in order to expose the axilla, the latter giving better drainage.

The statistics for the prognosis of the duration of life, with and without operation are given, but as these include older as well as more recent ones, their value is detracted from. Fifty-three months is the average duration of life with operation, and thirty-two months without operation, a difference of twenty-one months in favour of operation ; but probably the prognosis is much more favourable than this.

Tongue.—Mr. Whitehead makes an analysis of one hundred and

thirty-nine cases of operation on the tongue for cancer. His directions for operation are : The patient should be completely anæsthetised during the first part of the operation, but afterwards only partially insensible. The mouth is gagged and kept widely open. The head should be hanging, so that the blood may not gravitate into the pharynx. A firm ligature is passed through the tip of the tongue for the purpose of traction. The first step of the operation consists in dividing the mucous membrane between the tongue and the jaw, and the anterior pillars of the fauces and the tongue, rapidly separating from the floor of the mouth at its anterior part. The lingual arteries should be secured before division by Wells' forceps, and a ligature passed through the glosso-epiglottidean fold before finally separating the tongue. A mercurial solution is applied to the floor of the mouth, and finally the surface painted over with an iodoform styptic solution. Mr. Whitehead allows, and even encourages, his patients to sit up the first day after the operation. He never finds it necessary to do a preliminary tracheotomy. Of the one hundred and four complete excisions of the tongue there was a mortality of twenty.

Malignant tumours which are inoperable have been treated in various ways, but, with few exceptions, without much, if any, success. Professor Von Mosetig has treated cases successfully with an injection of 1 in 300 Merck's **Pyoktanin.** Perhaps cured is not the exact term to use, but there has been great reduction in the size of the tumours injected. Dr. Lodigiani and Dr. Bellotti have reported cases treated in a similar manner, without much result beyond apparently checking the progress of the growth and relieving the pain.

Dr. Dyer reports good results from the application of **Fuchsine** in some malignant ulcers. He uses a solution of 3 to 10 grains of fuchsine in 4 ounces of alcohol. In a case of large ulcerating cancer of the breast he applied this solution, with the result that in a month the size was reduced one-fourth, pain absent, and the foulness removed.

Professor Poucel has treated several cases of cancer by injections of **Bichloride of Mercury,** and some with complete success. He made six injections into the tumour, each about half an ordinary hypodermic syringe full, of 1 in 1000 of the sublimate ; the injections were renewed in about eight days, and in some of the cases the tumours entirely disappeared in three months.

REFERENCES.—Plique, " Révue de Chir.," p. 520 ; Rév. de Chir.," p. 1021 ; " Semaine Méd.," April 15, 1891 ; " Rév. de Chir.," p. 1022 ; " Rév. de Chir.," p. 530 ; " Cent. f. Chir.," Jan. 24, 1891 ; Bruns' " Bertrag. f. klin. Chir.," b. 4, h. 3 ; " Lancet," July 11, p. 69 ; " Lancet," May 9, p. 1527 ; " Lancet," May 9, 1891 ; " Wien. med. Woch.,"

No. 6; "Reforma Med.," Aug. 7, 1891; "New Orleans Med. and Surg. Jour.," April, 1891; "Therap. Gaz.," Nov. 15, 1890.

CANCRUM ORIS.

Synopsis.—(Vol. 1890, p. 193.) Cut away sloughs and swab the surface freely with **Perchloride of Mercury Solution**, 1 in 500, then dress with lint wetted constantly with a 1 in 1000 solution.

CARBUNCLE.

Synopsis.—(Vol. 1890, p. 193.) Wash the carbuncle with solution of **Carbolic Acid**, 1 in 40, or **Perchloride of Mercury**, 1 in 2000, then dust with a powder of **Iodoform** and **Zinc Oxide**, equal parts, and then cover with **Lint** soaked in **Carbolic Oil**, 1 in 40, renewing dressings once or twice daily.

CATARACT. (See "Eye.")

CHALAZION.

Synopsis.—(Vol. 1890, p. 197.) Ray injects 2 drops of **Cocaine Solution** into the cyst duct (after squeezing out some of the fluid) and puts a third in the conjunctival sac. Three minutes after, he incises the cyst at the palpebral margin, cleans it out with a sharp curette, and injects **Perchloride of Mercury Solution**, 1 in 2000.

CHANCRE.

Synopsis.—(Vol. 1891, p. 11.) **Aristol** as dusting powder.

CHILBLAINS. *T. Colcott Fox, M.B.*

℞	Acidi Carbolici	ʒj	Acidi Tannici	ʒj
	Tinct. Iodinii	fʒj	Cerat. Simplicis	℥iv

Misce bene ut ft. ung. Sig—Apply two or three times daily (Morrow).

REFERENCE.—"Jour. Amer. Med. Assoc.," Nov. 1. 1890.

CHOLELITHIASIS. *A. W. Mayo Robson, F.R.C.S.*

As by far the greater number of gall bladder affections are dependent on gall stones, cholelithiasis would seem to be the most fitting heading under which to consider the diseases[1] of the bile passages.

The frequency with which gall stones are found is dwelt on by Böllinger[7], who says that about one person in every ten is the subject of cholelithiasis, but fortunately in the greater number of cases no symptoms are produced, these only occurring when the stones enter the ducts or set up irritation.

In the same paper, and in one by Nannyn[6], many interesting points are raised on the prevalence of the disease in different localities and countries, and on the pathology, the authors inclining to the views that catarrh of the bile ducts and stagnation in the biliary passages are important factors in the formation of gall stones.

In Mr. Hutchinson's[12] "Archives" for July, 1891, is an illustration of an immense gall stone, probably the largest ever described. It was found blocking the common duct of a patient who had had long continued jaundice, which was the cause of death. The treatment of

cholelithiasis by large doses of olive oil is being revived.[11] When it was first suggested, we gave the method a fair trial, but were much disappointed with it, and have no faith in its efficiency. The reasons for this view are given in the "Med. Ann." for 1890. In the same volume the symptoms and treatment of cholelithiasis are more fully discussed.

It is being more and more recognized that jaundice and other physical signs are not necessary in order that the diagnosis of gall stones should be made, and on several occasions we have operated and removed gall stones on the strength of symptoms alone.[2] [13]

The removal of gall stones impacted in the ducts, and which cannot be extracted through the opening in the gall bladder, has received much attention. On numerous occasions we have crushed these concretions, either between the finger and thumb or between the blades of padded forceps.[4] The injection of ether or a solution of taurocholate of soda, through the opening in the gall bladder, has proved effectual on several occasions[5] [10] [14], and Mr. Thornton has successfully incised the common duct for the removal of calculi, afterwards suturing the opening.[5]

Mr. Lane[6] has published a case of rupture of the gall bladder where the patient recovered, after having a considerable amount of bile free in the peritoneal cavity for five weeks. Although this case is not unique, it confirms the views previously held that when surgeons are dealing with the bile passages the entrance of a little bile into the peritonæum need not cause anxiety.

The so-called "ideal" cholecystotomy, where the edges of the incision into the gall bladder are sutured and the viscus is returned into the abdomen, is still being occasionally performed, although statistics clearly prove that the method of suturing the gall bladder to the surface and inserting a drainage tube is a much safer procedure. In the absence of malignant disease, we have found cholecystotomy to be both a satisfactory and safe operation, having had thirty-one consecutive cases without a death.[9] [13]

REFERENCES.—[1]Mayo Robson, "Cholelithiasis, with Special Reference to its Surgical Treatment," "International Clinics," vol. i, p. 148 ; [2]also, "Cholecystomy for Gall Stones Performed on the Strength of Symptoms without Physical Signs," "Lancet," Jan. 11, 1891 ; [3]also, "The Removal of Gall Stones by Ether Solution, "Lancet," April 25, 1891 ; [4]also, "Cholelithotrity, with Cases," "Med. Chronicle," Oct., 1891 ; [5]Knowsley Thornton, "Cases Illustrating Hepatic Surgery," "Lancet," April 4, 1891 ; [6]Nannyn, Strasburg, "Origin and Treatment of Gall Stones," "Practitioner,"

Aug., 1891 ; [7]Böllinger, "Med. Chronicle," Sep. 1891 ; [8]Arbuthnot Lane, "Lancet," May 16, 1891, p. 1091 ; [9]Sklifosovsky, "Ann. of Surg.," Feb. 1891; [10]J. W. Walker, "Lancet," April 18, 1891, p. 874; [11]"Olive Oil in Treatment of Gall Stones," "Lancet," Oct. 17, 1891, p. 888 ; [12]Hutchinson's "Archives," July, 1891 ; [13]"Gall Stones and Their Treatment," Mayo Robson, Cassell & Co., 1892 ; [14]John Taylor, "Lancet," March 7, 1891, p. 548.

CHOLERA. *Frank J. Wethered, M.D.*

Dr. Patrick Hehir publishes in the "Indian Med. Gazette," No. 5, 1890, the results of his experience of **Salol** in the treatment of cholera. During a severe epidemic which occurred in Hyderabad six hundred and twelve cases of cholera were recorded. During part of the time all the patients in the hospital were treated with salol; 10 grains were given to each patient every two hours, with 15 minims of spirit of chloroform ; the maximum quantity given to any one case was 90 grains and the minimum 40 grains. Every case so treated recovered. The drug did not appear to produce any immediate influence, all the urgent symptoms gradually abating. Two effects, however, are stated to have been manifest—a shortening of the period of convalescence and an absence of symptoms of uræmia.

The general effect appeared to be to prevent transudation into the alimentary canal ; in fact, after a few doses the patients drank with avidity, and began to retain all the nourishing fluids administered to them. Under the influence of this increased quantity of liquid in the circulation the heart's action gained in vigor, the pulse returned, the temperature rose, the cyanosed aspect and shrunken features disappeared, and reaction was accelerated.

In the Fiume Hospital the method by which the algid stage of cholera was treated during the last epidemic was by giving **Gum Ammoniac** internally, together with stimulants, and injecting sulphuric ether hypodermically. According to Dr. Ritter von Giacich, the director of the hospital, this plan, which was always adopted, proved most successful, a great improvement taking place in 50 per cent. of the cases in a couple of hours' time. This made itself manifest not only by a rise of temperature and a stronger pulse, but also by the expression of the face becoming less pinched and anxious, after which the patient made good progress towards convalescence. **Warm Baths** were often administered with advantage. Where three hours elapsed after the treatment above mentioned without manifest improvement, the case always proved fatal.

References.—"Therapeutic Gazette," Oct. 15, 1890, and April 15, 1891 ; "Lancet," Nov. 1, 1890.

Synopsis.—(Vol. 1890, p. 199.) **Opium** is used in full doses (40 to 60 minims of tincture) in the premonitory diarrhœa and early stages only. In the algid stage, a mixture of Sp. Etheris, Sp. Ammon. Aromat. and Tinct. Lavand. Co. is given frequently. Some still use **Calomel** in heroic doses. A combination of **Carbolic Acid, Bismuth** and **Belladonna** is sometimes useful. To establish the urinary secretion in the third stage, **Hot Fomentations** over kidneys, **Diluents,** and perhaps **Sp. Ether. Nit.,** with continued stimulation, are resorted to. **Strophanthus** has been used in the third stage. Injection of ⅓ gr. **Perchloride of Mercury** deeply into gluteal muscles was successfully used in one case. A pill containing **Cannabis Indica,** gr. ss, and **Calomel,** gr. j or ij at intervals of an hour, and followed by **Turpentine** and **Cannabis Indica** internally, has been recommended to restore renal functions; (probably drugs in pill form are of little or no use in cholera). **Salol** has been proposed as an antidote to the cholera poison.

(Vol. 1891, p. 128.) ℞ Salol gr. 15, Mucilage ʒj, Chloric Ether ♏ 20, Water ʒj, M. Sig. Every three or four hours, and when reaction sets in ℞. Sod. Bicarb. gr. 10; Æther Chlor. ♏ 20; Sp. Æth. Nitros. ♏ 20; Aq. ʒj. Sig. Every four hours. **Eucalyptol** ♏ 5 for adults, ♏ ½ upwards for children, taken in milk every fifteen minutes for one hour, then hourly. **Morphia** and **Atropine. Phenol** with **Sulphuric Acid; Aseptol; Salol; Betol;** any of these combined with **Gallic Acid** are used to remove microbes and their poisons.

CHOREA. *Græme M. Hammond, M.D., New York.*

Dr. Moncorvo[1] speaks very highly of the value of **Antipyrin** in the treatment of chorea, and reports seven cases in which a cure was readily produced by this agent. He was led recently to test the action of **Exalgine.** The daily dose was 4½ grains, which was borne without any inconvenience. He was very much pleased with its action, and reports a case of severe chorea which was cured entirely in eighteen days.

Dr. Dresch[2], believing that chorea is a microbal disease, has administered **Sodium Salicylate** with good effect. He gives the drug in small and repeated doses, well diluted with slightly alkaline water. He does not consider it necessary to continue the remedy for more than eight or ten days.

Dr. Thomas W. Jenkins[3] reports the two following cases: The first one, a boy, aged four, suddenly developed chorea, which, however, only affected the left side of the body. About a week later he vomited a round worm about twelve inches long. After treatment by **Turpentine** and **Senna,** a great number of round worms of all sizes were evacuated. A few days later the patient was perfectly well. A year later a second attack occurred. Turpentine was again administered, and a great number of thread worms were voided. In a few days all choreiform movements ceased. The second case was twelve years of age when chorea developed. After suffering from the affection for a year, during which time various remedies were tried without avail,

the oil of turpentine was administered. A number of round worms were discharged. In a few days the patient entirely recovered.

REFERENCES.—[1]"Thérapeutique," 30 Novembre, 1890; [2]"Brit. Med. Jour.," Oct., 1890; [3]"Lancet," Sept. 27, 1890.

Synopsis.—(Vol. 1890, p. 201.) **Chloral**, in large doses, to secure prolonged sleep, is recommended.

(Vol. 1891, p. 132.) **Fowler's Solution**, dose increased up to 15 drops twice daily, and finally even up to 27 drops. In anæmic cases, **Iron** and **Cold Sponging**, followed by hard rubbing. If heart is weak, **Digitalis** or **Strophanthus** as adjuvant to **Arsenic**. Bromides contraindicated, unless sexual excitement exist. Circumcision and treatment of vulvar diseases; correction of eye-strain. **Chloralamide** gr. 15 thrice daily. **Sulphonal**. **Sulphate of Eserine**, 00·1 gr. twice daily subcutaneously.

CLUB-FOOT. (See "Orthopædics.")

COLIC.

Synopsis.—(Vol. 1891.) **Chloralamide**, gr. 30 to 45, as hypnotic in biliary colic (p. 21). **Dioscorea Villosa**, fluid extract gtt.10 hourly in biliary colic (p 25); also in renal colic (p. 26)

COLOTOMY (Lumbar and Inguinal).

Herbert W. Allingham, F.R.C.S.

During the year Dr. Bodenhamer has published a paper on lumbar colotomy, in which he gives a summary of the history of the operation, and declares himself in favour of the oblique incision.

In previous issues of the "Annual," lumbar and inguinal colotomy have been carefully compared and weighed one against the other, so that the arguments for and against the respective operations need not be gone through again. The writer's experiences in left inguinal colotomy have been set forth in a paper entitled, "Fifty Cases of Left Inguinal Colotomy, with Remarks on Points of Special Interest," written for the last meeting of the British Medical Association. A *résumé* of the paper will give a succinct account of the present practice of the inguinal method.

A feature of the paper was that it not only recorded successes, but also pointed out defects; moreover, it was shown how experience had led to the conquering of any imperfections, and to the devising of various modifications of and additions to the operation of inguinal colotomy as first performed by the author.

A large diagram of the fifty cases was drawn up, with special regard to the following heads, which form the skeleton of the paper: (1,) The nature of the disease necessitating the operation; (2*a*,) The ordinary inguinal operation, as performed by the writer; (2*b*,) A description of what the writer terms the supplementary operation, and the occasions for its use; (3,) The length of the sigmoid mesentery; (4,) The spur; (5,) Prolapse after the operation from the upper or the lower end (or

opening), or from both ends ; (6,) The action of the bowels, and from which end.

Brief mention was also made of the difficulty of ascertaining the length of life after the operation,—life for a fortnight afterwards being taken to show that patients had not died from the effects of the operation itself.

Under the first head it was shown that in no less than forty-one out of the fifty cases it was malignant disease that had necessitated the operation. The remaining cases were operated upon for ulceration with stricture, sometimes combined with fistulæ.

The distinctive characteristic of the writer's method of performing the operation is the extreme importance attached to the procuring of a good spur, so as to prevent further irritation from the passage of fæces beyond the inguinal opening into the rectum. In former years a full description has been given of the operation. The incision should be not more than two inches in length, and should be made about one and a half inches inside the left anterior-superior spine of the ilium. A special feature is the method of suturing. When a good loop of the sigmoid has been drawn out, a stitch is passed through the skin on one side, then through the mesentery behind the bowel, back again through the mesentery, and is finally tied to the end of the suture which has passed through the skin.

The operation can be easily performed in fifteen minutes.

Readers of the "Annual" will retain in their recollection the supplementary operation to prevent prolapse through the opening. The gut is pulled out, the mesentery is made taut, and is clamped with the writer's special clamp, which is left on for twenty-four hours, or longer if required. It was found wiser to abandon this method, as a rule, for cases of malignant disease, and to confine it chiefly to cases of stricture.

Fourteen out of the fifty cases were treated by the supplementary operation with perfect success as regards after prolapse. Not one patient died, in spite of the supposed danger.

It was pointed out that the mesentery varied considerably in length. It might be called *long* when reaching to or exceeding five inches. In such cases it is possible that there might be difficulty in finding the gut from the inguinal opening. A *medium* mesentery is one of two or three inches in length, and it is then that the gut can be well pulled out of the wound and a good spur made. Instances of a *short* mesentery are when the mesentery is so small as to be practically non-existent. It is then difficult to fix the gut to the skin, and inasmuch as a needle cannot be passed behind the gut, no spur is obtainable. In over half the cases the mesentery was of the medium variety.

There is no need to recapitulate the pressing need of making (if possible) a good spur. Unless a double barrelled opening is formed, fæces will pass below the opening to the rectum, and a fæcal fistula will have been formed, and not a true artificial anus. In ten of the cases no spur was made, but in three of these its importance had not been perceived.

It has been already shown that in the cases the supplementary operation effectually prevented any after prolapse. This prolapse naturally tends to occur when the mesentery is long, and may occur from either the upper or the lower opening, or from both. It took place in several cases before the supplementary method had been devised, and after that in some cases of malignant disease where such an expedient was thought not to be advisable. In seven cases it occurred from both ends at once, in five from the upper end alone, and in six from the lower.

The bowels ought to act (if the operation is a success) from the upper end, but in some earlier cases in which the importance of a spur had not been fully discovered, and in some later ones where the mesentery was too short to allow of the making of one, they acted from the upper end and per rectum. In six cases the bowels acted from the lower end. In these cases the gut was *twisted* when it was pulled up into the inguinal opening and fixed there. The mesentery was usually long, or was long but rendered of medium length by the twist. The possibility of twisting tells strongly against the suggested division of the gut, to be followed by the dropping of the distal end into the belly and the fixing up of the proximal end alone. If this twisting does occur, such a procedure would end in the patient's death.

The discussion of the above details and difficulties may be found of service to other surgeons when practising inguinal colotomy.

Lumbar colotomy may be advisable in cases of great distension, when patients have been left for long, and an immediate operation is imperative.

REFERENCES.—Bodenhamer, "New York Med. Jour.," Aug. 22, 1891; Herbert W. Allingham, "Brit. Med. Association," August, 1891.

CONDYLOMATA.

Synopsis.—(Vol. 1891, p. 11.) **Aristol** as dusting powder for moist condylomata.

CONJUNCTIVITIS. (See also "Eye.")

Synopsis.—(Vol. 1890, p. 205.) Subdue inflammation by cold compresses and astringents, *e.g.*, **Sulphate of Zinc Lotion**, gr. j to ℥j, using compresses to allay the subsequent irritation. Smear the edges of the lids with **Vaseline**, or, better, **Vaseline with Benzoated Lard.** When conjunctiva is much

swollen, and in folds, use antiseptics, such as a dilute solution of **Permanganate of Potash**, dropped into conjunctival sac every one, two, or three hours. The granulations may also be cauterized with a solution of **Nitrate of Silver**, increased from 0·5% to 1 or 2% strength, washing out the eye with warm water after each cauterization. Cease cauterization if ciliary pains arise. If conjunctiva remains in a spongy condition, use solid **Sulphate of Copper**.

For *Diphtheritic Conjunctivitis.*—Blanch washes the eyes with saturated solution of **Boric Acid**, removes as much of the false membrane as possible with forceps, and rubs the everted lids with a cloth wetted with **Citric** or **Lactic Acid**, using antiseptic **Helenin** finally, to avoid reproduction of the false membrane. He avoids moist warmth.

(Vol. 1891, p. 6). **Abrus Precatorius** (jequirity) seeds infusion locally in chronic granular conjunctivitis.

CONSTIPATION (in Children).

Henry Dwight Chapin, M.D., New York.

Dr. Karnitsky[1] advises **Abdominal Massage** in the treatment of constipation in children: (1,) Abdominal massage may produce effects upon the alimentary tract, in connection with digestion, which are not inferior to those produced by purgatives; (2,) Habitual constipation may be easily cured by massage without the aid of purgatives; (3,) The younger a child is the more readily can the constipation be cured; (4,) The younger a child is the milder should the manipulations be, and the shorter the *séances*; (5,) The duration of the *séances* should be from three to ten minutes according to the age of the patient. Longer *séances* are inadvisable, and may even be harmful and aggravate the condition of the patient: (6,) Abdominal massage may be regarded as the best means of treating constipation in children. Purgatives should only be used in exceptional cases.

Dr. J. B. Nias[2] advises **Dietetic Treatment** in the habitual constipation of children.

In what direction does the error in the composition of a child's food chiefly go? Towards the substitution of the cheaper elements for the dearer. The feeding of dependents is therefore a perpetual robbery of fat and the substitution of hard and indigestible albumens for the better sorts; and also, for young children, the giving of starches in the crude form instead of partially converted into sugar. Such necessities are indicated by the liking for the pastry-cook. There can be no greater error than to set down to the same dish persons of all ages and both sexes; and all the apparently capricious dislikes of children about their food can be referred to true physiological requirements.

The dietetic treatment of constipation in children may therefore be summed up as the provision of a diet intermediate in composition between human milk on the one hand, and bread and meat on the other, and according to the progress of the child's development, pro-

portionately rich in albuminoids, fat, and sugar, and poor in starches ; all temptations to economy being resisted.

Remedies which are to be addressed, as in the case of constipation, to the intestines, should have a slowly soluble form. The powdered drugs are therefore generally preferable to the active principles. One has to exercise one's ingenuity in making them palatable. Doses of medicine can be for continued use very small. The pill of **Aloes** and **Iron**, in a 1 grain pill, coated, combines a laxative tonic, and carminative in a compact and convenient form. The new form of tabloids or tabellæ is a great boon for the administration of compound rhubarb powder. The compound rhubarb pill can also be given without its bulky excipients in this form. It is good practice to try to confine oneself to these three remedies for genuine aperients.

But it is generally said that the simple bitters prove laxative ; they are so because they are intestinal tonics. These harmless remedies, found in every pasture, and placed by nature within the reach of every animal, are too much neglected because they do not lend themselves to pharmacological research.

REFERENCE.—" Jour., de Med.," March 15, 1891 ; [2] " Pract.," May, 1891.

CONSTIPATION (Treatment of Chronic). *Frank J. Wethered, M.D.*

Flatau[1] recommends a form of treatment which is applicable to those cases in which on account of negligence or sedentary habits a condition of habitual constipation is set up, with its usual consequences in the lower bowels—such as hæmorrhoids and catarrh of the rectum, etc. While warmly praising treatment by massage, carried out by skilled hands, Flatau recommends in cases where there is a laxity of the rectal mucous membrane, causing part of it to present at the anal opening, that it should be carefully washed with cold water and dried, after which powdered boric acid is well sprinkled over or rubbed in. In cases where there is torpor of the colon, and the mucous membrane cannot be treated in this way, the powder should be insufflated. This can be carried out by an insufflator with a short, wide tube introduced into the rectum and carrying about three-fourths of a teaspoonful for use at one time. After the use of so simple a proceeding, fairly well-marked peristaltic movements may be observed in the colon and copious motions passed. Three or four evacuations daily have been passed during the first days of use. The patient should be encouraged to attend to all calls to stool, and avoid suppressing even the slightest indications of intestinal peristalsis.

REFERENCES.—[1] "Berlin. klin. Woch.," No. 9, 1891 ; "Practitioner," June, 1891.

Synopsis.—(Vol. 1890, p. 206.) **Glycerine Enemata** especially suited to constipation of pregnancy, and in infantile constipation. **Glycerine Suppositories** cause no burning, but act more slowly than the enemata. A piece of **Cotton Wool** as large as a hazel nut, well saturated with **Glycerine** and used as a suppository is very effectual. **Electricity**, using a mild galvanic current, with the negative electrode passed well within the sphincter is often useful, and the Faradic current may be used to strengthen abdominal muscles at the same time. **Massage** is often very serviceable. If constipation be accompanied by spasm and hypertrophy of the sphincter, the anus must be forcibly dilated under an anæsthetic, or **Bougies** used. Congenital narrowness of the anus must be treated by forcible dilatation or division of the sphincters. An abdominal belt may materially assist women whose abdominal walls are low and pendulous.

(Vol. 1891, p. 136). In persistent cases, complicated with spasm and hypertrophy of sphincters, forcible **Dilatation of Anus**, under anæsthesia, or passage of bougies. **Galvanism** for atony. **Massage** and abdominal belts in multiparæ.

CONVULSIONS (Infantile). *Henry Dwight Chapin, M.D., New York.*

Dr. T. G. Davis advises in convulsions in children, if the patient is cyanotic, a few whiffs of **Amyl Nitrite**, followed by inhalations of chloroform, to relax spasm. These should be followed as soon as possible by hypodermic injection of **Tincture of Veratrum Viride**, ½ drop for each year of age, up to six years. The veratrum may be repeated in a half hour or an hour, if the convulsions recur.

REFERENCE.—" Phila. Med News," 1891, p. 217.

Synopsis.—(Vol. 1890, p. 209.) When due to dentition, falls on head, meningitis, and acute tuberculosis, **Calcium Sulphide**, 1 gr. in half a pint of water, giving a teaspoonful hourly. **Antipyrin** may be alternated with this in ½ to 2 gr. doses.

CORNEA (Conical).

Synopsis.—(Vol. 1890, p. 210.) Clear glass shells of the same curve as the natural cornea have been used, and with the aid of **Cocaine** may be kept on some hours. Tattooing the summit of the cone has improved vision and prevented increase of the deformity.

(Vol. 1891, p. 137). R Fluorescein gr. 10, Sod. Bicarb. gr. 15, Aq. ℥j. Solution stains cornea if epithelium is removed, demonstrating presence of ulcer, or foreign body.

CORNEAL OPACITIES. (See " Eye.")

CORNEAL ULCER. (See " Eye.")

CORNS.

Synopsis.—(Vol. 1890, p. 210.) Subplantar corns may be treated by painting a ring of **Glycerine Jelly** around them, allowing it to dry, and then fitting a circular piece of the strongest **Salicylic Plaster** within the ring and painting over the whole with two or three coats of **Jelly**, and when these are almost dry, a layer of **Cotton Wool** is placed over them and pressed on. The dressing is changed once or twice a week.

CORYZA. *Frank J. Wethered, M.D.*

A writer in the Memphis Medical Journal claims that **Salicylate of Sodium** is as equally efficacious in the treatment of bad colds as it is in tonsillitis. A prescription of ½ an ounce of salicylate of sodium with ½ an ounce of syrup of orange peel, and enough mint-water to make 4 ounces, is recommended in the dose of a dessertspoonful every three or four hours, until the specific action of the salicylate—that is, ringing in the ears—is produced. It is claimed that aching in the brow, the eyes, and the nose, together with the sneezing and the nasal discharge, will then cease, and will entirely disappear in a few days, not leaving, as is usually the case, cough from the extension of the inflammation to the bronchial tubes.

REFERENCE.—"Therapeutic Gazette," Jan. 15, 1891

Synopsis.—(Vol. 1891.) Euphorbia Pilulifera, fluid extract, ♏ 30 to 60 every four hours, in coryza (p. 27). Euphrasia Tincture, gtt. x early in fluent coryza (p. 28). Hypnal, gramme dose for spasmodic cough (p. 35). Menthol for acute colds in head, and catarrhs of nose and throat (p. 39).

COUGH. *F. de Havilland Hall, M.D.*

Some old remedies seem to be coming to the fore again. Dr. P. M. Gorodtzoff[1] has drawn attention to the prolonged application of **Sinapisms,** as an excellent means of relieving troublesome cough. A freshly-prepared mustard plaster measuring about 9 inches by 6 is to be applied daily and left on the whole night, or even for twenty-four hours. In the case of adults the mustard may be mixed with an equal quantity of wheat or any other meal, while in persons with tender skins, or in children, a 1 to 3 mixture was employed. In order to prevent any excessive irritation of the skin, the plaster was applied one day to the front of the chest, and on the next to the back, on the third again to the front, and so on. In none of the cases were any serious burns inflicted, the patients bearing the application perfectly well. The sinapisms of course constituted only a part of the treatment, other measures being employed as required.

The writer draws the following conclusions: (1,) In certain affections, especially in influenza, pneumonia and acute bronchitis, a mustard plaster is a safe and effective substitute for morphine and other narcotics usually administered for relieving cough; (2,) In other cases, especially in exudative pleurisy and phthisis, it is a valuable adjuvant to narcotics, allowing the administration of them in much smaller doses; (3,) While relieving the cough the plaster also improves the pulse and respiration; the former becoming fuller and slower (by five or six beats per minute), the latter deeper and similarly less frequent; (4,) The effects seem to depend upon the mustard

volatile oil, which may penetrate into the system through the skin and lungs ; (5,) Sinapisms applied in the way indicated appear to promote the absorption of inflammatory effusions both in pleurisy and pneumonia.

Sir Andrew Clark[2] has directed attention to a troublesome affection which he has designated the barking cough of puberty. In a typical case "the paroxysms consisted of a succession of loud, dry, clanging convulsive coughs, varying in intensity and duration, broken into irregular bars or phrases, and resembling at one time the barking, and at another the howling, of a dog." Several of the speakers who took part in the discussion following the reading of Sir A. Clark's paper regarded the condition as being one closely allied to hysteria. Sir A. Clark has found that improvement has almost invariably followed the enforcement of a simple, but liberal dietary arranged into three, or at most four, meals a day, abstinence from alcohol, cold or tepid sponging, warm, but not too warm, clothing, active outdoor exercise, early hours and general discipline. The throat may be painted with glycerine of borax and oxychloride of bismuth and morphine, or the same combination may be used substituting cocaine for the morphine. Of internal remedies two had been found of use, viz., syrup of the bromide of quinine and iron, with small doses of arsenic ; the other is a pill of reduced iron, valerianate of zinc, belladonna, and nux vomica. A sea voyage has proved beneficial in some cases.

REFERENCES.—[1] Supplément to "Brit. Med. Journ." Sept. 12, 1891 ; [2] "Brit. Med. Journ.," vol. ii., 1890, pp. 1416 and 1428 ; "Lancet," vol. i., 1891, p. 16.

COXITIS (Senile).

Synopsis.—(Vol. 1890, p. 211.) Some cases are relieved by counter-traction by means of a long splint with a stirrup and weight. This is used for about a month or six weeks, after which a supporting splint allowing of some locomotion is applied.

CRAMPS.

Synopsis.—(Vol. 1891, p. 18.) Cannabis Indica Tincture, ♏ 1 to 10 in nocturnal cramps of old or gouty persons.

CROUP.

Synopsis.—(Vol. 1890, p. 211.) Mercurial Vapour is recommended by Rothe. A tent is fixed over the bed, in which 30 grs. of Calomel is vaporised on a metal plate over a spirit lamp, repeating the inhalation every two or three hours (with smaller doses of Calomel), and also whenever a severe attack of dyspnœa comes on. Turpentine has also been used, a teaspoonful being given at first, and this may be repeated more than once at intervals. When the patient begins to recover, a mixture of Turpentine and Mucilage is used. In one case a spray consisting of Turpentine 4 parts, Carbolic Acid 4 parts, Alcohol 3000 parts, and Water 1000 parts, was used with the best results.

CURVATURE, Lateral. (See "Orthopædics.")

CYSTITIS. (See also "Bladder.")

Synopsis.—(Vol. 1890, p. 213,) Lavaux's method of washing out bladder in painful cystitis, using rubber tube with guarded nozzle to conduct medicated solution from a graduated reservoir, placed about one and a half metres above patient, who lies on his back. The fluid being in the reservoir, the air is forced out of the tube, which is then introduced into the urethra, being removed when sufficient fluid has passed into the bladder to cause a desire for micturition, and after emptying the bladder, the tube is again introduced. **Boracic Acid,** in saturated solution, is usually used first, and in obstinate cases, **Nitrate of Silver** solution. If pain is excessive, a 4% solution **Cocaine** is first thrown in and allowed to remain from three to five minutes. Temperature of injected fluids should be 100° to 104° Fah. when placed in the reservoir.

For cystitis in women, dilate urethra rapidly and swab out vesical neck with **Glycerine Carbolate,** B.P., using 10% **Cocaine** solution. In tuberculosis of bladder, **Free Scraping** and **Drainage.**

(Vol. 1891, p. 138). Forcible dilatation of urethra, with application of **Glycerine** and **Carbolic Acid** to mucous membrane, using **Cocaine** to relieve pain. Injection of **Creolin,** 2% solution. **Lycopodium Trituration,** with sugar of milk, gr. 2 to 10 in vesical catarrh (p. 38).

CYSTS (Osseous). *Greville MacDonald, M.D.*

Cysts of the Middle Turbinated Body.—Occasionally the middle turbinated becomes the seat of the development of osseous cysts. They are lined with mucous membrane, covered with columnar epithelium. They are often associated with polypi, which may develop either inside or outside the cavity. Rarely they attain enormous dimensions. They can generally be removed with forceps to break down the walls, or by a strong snare.

REFERENCE.—Macdonald, "Lancet," June 20, 1891.

DERMATITIS HERPETIFORMIS. *T. Colcott Fox, M.B.*

Increased experience shows that this malady is not so very rare, but that the treatment is most unsatisfactory.

There is no difficulty in healing up the inflammatory lesions, and great relief can be afforded the patient from the subjective symptoms, but the evolution of the eruptions and their relapse can not be prevented by any known means.

Besnier says there is no active means of calming the atrocious itching, the pains, and protean malaise, which afflict the patient each nightfall, other than subcutaneous injections of morphia, a method of relief to which there are many serious objections. Other hypnotics have only temporary indications, and they often exasperate the symptoms. Hypodermic injections of **Fowler's Solution** (1 to 8 drops in the twenty-four hours), combined with the intermittent use of **Opium** or **Belladonna,** have brought about cures, or, at least, mitigation of the

malady. It is essential to sustain and tone-up the system. Locally boric acid lotion with a little alcoholic solution of salol, inert powders, evacuation of bullæ, moist impermeable dressings, oily applications, simple ointment, wadding, applied according to circumstances. Baths must be given with great care, and medicated baths are often injurious. Pruritus may be controlled by local applications of a decoction of coca leaves (4 grammes per litre of water). An excellent and efficacious dressing when intense congestive outbreaks occur is afforded by compresses of lint soaked in sodium salicylate (2 per cent.) and sodium bicarbonate (1 per cent.).

Duhring says there is no hope of a speedy cure, and in many cases no remedy does any good. The best applications are the revulsive stimulants, *e.g.*, tar, carbolic acid, sulphur, thymol, ichthyol, etc. **Sulphur Ointment** (℥ij to the ℥j) well rubbed in is the best, but in the erythematous phase a weak solution of tar is preferable. Schwimmer found an aqueous solution of **Thiol** (1 to 3) useful; Stelwagon, a properly diluted lotion made of liq. carbonis detergens and liq. picis alkalinus; white tar and carbolic acid; Taylor, "listerine" and calomel, with special regimen, and laxative and derivative remedies.

REFERENCES.—Kaposi's "Lectures," 2nd French edition, by Besnier and Doyon, 1891; Duhring, "American Journ. of Med. Sci.," Feb. 1891; Schwimmer, "Wiener klin. Woch.," No. 18, 1890.

Synopsis.—(Vol. 1890, p. 215.) **Soda Arseniate** in moderate doses at first, and then pushed to extreme limits. If fever is present, give **Hydrobromate of Quinine.** *Locally*, if pain is severe, open the bullæ with an aseptic needle, and use **Boric Acid** lotions, or antipruriginous ones of **Carbolic Acid** or of **Corrosive Sublimate.** **Dusting with Dry Powder** is sometimes best.

DIABETES. *Robert Saundby, M.D., F.R.C.P.*

A drug that could effectually control the loss of sugar from the organism would be of the utmost value. So far, the various remedies that have been tried for this purpose have been found wanting. Among the most recent for which this power has been claimed is **Jambul,** originally recommended by Banatvala, a government apothecary in Madras, whose statements were afterwarks confirmed by Dr. Quanjer, in the Dutch colony of Batavia. There seems good reason to believe that the drug in its native habitat does possess considerable power, but the results of trials in this country have been very contradictory. Messrs. Kingsbury and Mahomed have published favourable results in isolated instances, but the author tried it on a series of cases in large doses without any decided effect. The experiments of Lewaschew[1] confirm the suggestion that the drug is not always of

equal value, as in his first trial no effect whatever was produced with doses of 30 grammes (1 oz.) daily of the powdered seeds, while in a second case where a fresh supply of the drug was administered in doses of 20 to 30 grammes daily, the urine was reduced from 11 litres to 3, and the sugar from 777 to 211 grammes. In his other cases the same improvement resulted, though in no case did the sugar completely disappear. Dujardin-Beaumetz[2] thinks it should not be given in severe cases, but that it is useful in those of moderate intensity. Dubousquet-Laborderie, following in the discussion, confirmed this opinion, and quoted four cases in which benefit was obtained from its use in combination with strict diet. It is, therefore, advisable to give an extended trial to this drug, and druggists would do well to endeavour to supply fresh seed or to devise some preparation which will retain the active properties of the fresh drug.

Salicylate of Sodium is another drug which is regarded with some favour in diabetes, and Dr. Mansel Sympson[3] has published a very successful case in a lad of seventeen.

Creasote, in doses increased from 4 to 10 drops daily, is said by Valentini[4] to have caused the suger to disappear in two cases of diabetes.

Arsenic was found by Bufalini[5] to reduce the sugar 50 per cent. in ten days.

Basic Hippurate of Chalk is stated by Poulet[6] to cure diabetes in combination with strict diet. He gives 1 gramme (15 grains) of the drug in a tablespoonful of water sweetened with saccharine three times a day.

Ergotinine, subcutaneously, in doses of 4 to 7 drops daily, in combination with Vichy water and strict diet, is stated by Laurens to have cured a case of diabetes in a lady at the climacteric period, but there is reason to believe that such cases are often cured by very various means.

In a lecture on the treatment of diabetes Professor Dujardin-Beaumetz[7] has emphasized the value of **Fatty Food**; while drawing attention to the value of bread made from soja meal he has pointed out the disadvantages of its strong taste and purgative action. He recommends the addition of one potato to each meal as a substitute for bread; he condemns skim-milk as most disastrous, and prohibits malt liquor and ripe fruit.

Wright[8] thinks that diabetics should be fed on proteids, fats, and lævo-rotatory carbo-hydrates; but lævulose, as such, does not occur in nature; inulin is found in dahlia tubers, in dandelion, chicory, and other roots, and Kulz has pointed out that it can be baked into good

bread. He also suggests that in the spring Jerusalem artichokes contain only lævulin and inulin.

The treatment of *Diabetic Coma* has been specially discussed by Schmitz[9], of Neuenahr. He recognizes two causes: (1,) Fatty heart; (2,) Toxæmia. For the first he insists on the early recognition of the lesion and the consequent employment of due care; above all in the need for rest in bed, when the first sound of the heart is absent or indistinct, and the use of stimulants, especially black coffee. In the second form he recommends early and thorough purging with a large dose of castor oil.

Although the exact relations of acetonæmia to diabetic coma have not been established, considerable interest still attaches to the recognition of the formation of acetone in the body. De Renzi suggests that it is simpler to look for it in the expired air than in the urine, and employs for this purpose a small, thin walled bottle, fitted with an india-rubber cork, through which run two tubes. The bottle is placed on ice or in a freezing-mixture, and the patient allows the expired air to pass through one of the tubes. In a few minutes sufficient fluid is collected for examination. The test used is that of Lieben, which consists in the formation of iodoform by treating the liquid with caustic potash and solution of iodine in potassium iodide. If the precipitate be heated on a water bath the iodoform will be volatilized and be deposited in crystalline form on the cool parts of the apparatus. A solution which contains only 0·01 milligramme of acetone will give the precipitate of iodoform in from one to three minutes. A stronger solution will give the reaction immediately on adding the reagents.

The relation of the *Pancreas* to diabetes has continued to engage the attention of pathologists, the most noteworthy advance having been made by Lepine[10], who has shown that the normal blood contains a glycolytic ferment, but in the blood of diabetics, and of animals rendered diabetic by removal of the pancreas, this glycolytic power is greatly diminished. He suggests that the ferment passes directly into the circulation, as ligature of the duct or injecting it with paraffin is not followed by glycosuria.

REFERENCES.—[1]"Berlin. klin. Woch.," Feb. 23, 1891; [2]"Bull. de Thérap.," March 23, 1891; [3]"Pract.," Aug., 1891; [4]"Les Nouveaux Remèdes," March 8, 1891; [5]"Centralblatt für klin. Med.," No. 39, 1890; [6]"Bull. de Thérap.," Oct. 30, 1890; [7]"Therap. Gaz.," Oct. 15, 1890; [8]"Brit. Med. Journ.," vol. i., 1891, p. 787; [9]"Berlin. klin. Woch.," Aug. 25, 1890; [10]"Comptes rendus.," t. cx.; [11]"Münch. med. Woch.," Nos. 1 & 2, 1891.

Synopsis.—(Vol. 1890, p. 216.) **Opium** and **Alkalies** with appropriate diet. **Alkaline Mineral Waters,** Vals, Vichy, or Contrexéville is advised; with lemon juice or claret. **Jambul** has done good in some cases. **Antipyrin** controls the formation of sugar to some extent.

(Vol. 1891, p. 139.) **Antipyrin,** gr. 30 daily, and increased up to 90 in diabetes insipidus. **Casearia Esculenta Extract,** gr. 20, or of powdered root ʒij or iij twice daily, with powdered sugar (p. 19). **Phosphorus,** gr. $\frac{1}{10}$ in perles daily (p. 45).

DIARRHŒA. *Frank J. Wethered, M.D.*

Dr. Eccles[1] advocates the treatment of chronic diarrhœa by **Rest** and **Massage.**

One of the most notable features in all cases of chronic diarrhœa is the atony of the muscular coat of the stomach and intestines; and one would be almost inclined to believe that the first tissues to suffer from the malnutrition resulting from the diminished absorption (which can be proved to exist in all these cases by means of the salol test) are the walls of the gastro-intestinal tract themselves. Probably this condition of affairs is brought about by the development of alkaloids, the products of albuminous decomposition, due either to some abnormality in the action of the natural enzymes, or to the introduction of micro-organisms that induce the formation of some poisonous chemical matter causing dysperistalsis, increased secretion, and consequent diarrhœa.

After a consideration of the effects which are produced by food stuffs remaining too long in the stomach and intestine, Dr. Eccles proceeds to explain his treatment.

In all cases unquestionably **Rest** is an important factor, and in this connection the term rest is used in its most comprehensive sense, to imply not only the absence of muscular or bodily fatigue, but of all such conditions as cold, hunger, business worry, or domestic anxiety.

So far as physical rest is concerned, the recumbent position in a warm bed must be enjoined. The most assured success has followed treatment in which, for the first few weeks, at all events, the patient has been kept in bed.

An equable surface temperature appears to be necessary to the successful treatment of these cases, and until the powers of assimilation have been regained, and thus the nutrition of the body re-established, the most convenient way by which to ensure the absence of cold impressions on the skin is to promote the existence and maintenance of a layer of warm air enveloping the surface of the body.

In all orders of digestion for which Dr. Eccles has employed massage, frequent manipulation of the abdomen enters very largely into the mechanical part of the treatment. The number and duration of

the local manipulations necessarily depend very greatly upon the individual requirements of each case, and no mere routine practice will suffice to obtain the desired result.

In the less serious cases, manipulation for about ten minutes or a quarter of an hour, administered within an hour after meals, is sufficient. In graver conditions, however, it is sometimes found necessary to practise local massage both before and after meals, either with or without firm kneading over the shoulders and back. In the earlier stages of the treatment, general corporeal massage is practised once daily, and as the food taken and the strength and weight of the patient increase, massage of the whole body is given twice daily.

Finally, the author sums up his conclusions as to the effect of kneading the abdomen in cases of chronic diarrhœa as follows : (*a*,) The generation of gas within the stomach and intestines is diminished and its expulsion effected ; (*b*,) The onward movement of the gastro-intestinal contents is favoured ; (*c*,) The rapidity of circulation through the visceral lymph and blood vessels is increased ; (*d*,) The circulation through the liver is improved, and thus the destruction of alkaloids by this organ is promoted. In this connection perhaps not the least valuable effect produced by abdominal massage is the stimulation to more vigorous action of the diaphragm, and the consequent auto-massage, if one may so describe it, produced by the deeper inspirations and abdominal reflexes excited by the earlier manipulations of the abdominal wall ; (*e*,) The abdominal vascular area is dilated ; (*f*,) The rate of absorption from the intestines is increased ; (*g*,) The intestinal nerves are stimulated.

Professor J. A. Hare[2] describes the treatment of two forms of diarrhœa observed chiefly in children :—

(1,) Diarrhœa due to defective secretion of the various intestinal juices : In these cases there is a history of constipation, with light-coloured or greyish stools, which is suddenly replaced by diarrhœa of watery stools, containing particles of curd or semidigested food ; the stools have often a mouldy odour ; the child rapidly wastes, suffers from constant vomiting, and ordinary astringent remedies only check the diarrhœa temporarily, and do not ameliorate the general condition. In these cases **Podophyllin** is of great value ; under its use the stools gradually assume a yellowish or brown tinge. The treatment has the further advantage that it is not followed by constipation. The prescription for a child of sixteen months or two years is as follows :—

℞ Resinæ Podophylli gr. j | Alcohol ℥j

Sig.—One drop in a teaspoonful of water every five hours. For an older child 2 grains of podophyllin resin may be dissolved in the alcohol.

(2,) Diarrhœa due to fermentation and irritation of the intestines, with consequent formation of mucus: The child passes stools in which mucous masses, often enveloping scraps of food, float in a little watery fluid, or the mucous masses are passed alone or mixed with streaks of blood. **Corrosive Sublimate** is useful in these cases. The following is the prescription Dr. Hare recommends:—

℞ Hydrarg. Bichlor. gr. $\frac{1}{5}$ | Aq. Destillat. ℥ij

M. Sig.—One teaspoonful every five hours.

It is important to use pure distilled water; ordinary water may precipitate the mercury. Professor Hare does not claim that either of these methods of treatment is novel, but he seems to have defined the cases in which the drugs should severally be used with greater precision than other writers.

Coto Bark[3] possesses in Bolivia considerable reputation as a remedy in the treatment of acute rheumatism and diarrhœa. It occurs in the form of long reddish rolls, whose odour and appearance closely resemble those of cinnamon. The active principle is an alkaloid, cotoine.

A number of preparations have been employed, of which the tincture, the wine, the powder, and the extract may be mentioned, though it is preferable to administer the alkaloid cotoine in doses of from 3 to 9 grains each day. Hypodermic injections of cotoine dissolved in acetic ether (1 part in 4) have been proposed, but these injections cannot be recommended on account of the severe pain which their employment produces.

REFERENCES.—[1] "Practitioner," Dec., 1890; [2] "University Med. Magazine," Oct., 1890; [3] "Therapeutic Gaz.," Sept. 15, 1890.

DIARRHŒA AND INDIGESTION (Infantile).

Henry Dwight Chapin, M.D., New York.

Dr. T. M. Rotch[4] discusses the management of human breast-milk with reference to its ingredients in cases of difficult infantile digestion:

We can safely say that the word albuminoids is a general term, which includes casein and albumen, also that these factors of the complete whole vary in their proportions to each other, according as the mammary function is or is not, in a state of equipoise. In the colostrum period also, and probably in its analogous periods of sickness, emotion, etc., the albumen is in excess proportionately to the casein, while as the equipoise of the function becomes more complete, the casein is increased proportionately to the albumen. Probably at the end of lactation, as in the beginning, we shall find this same condition of richness of albumen and deficiency of casein. In the beginning, then, of lactation, during lactation, when normal metabolism is interfered with, and as lactation draws to a close, we have analogous conditions, in

which the mammary gland, instead of being a normal secretory organ, becomes abnormal and a more or less excretory organ. During these periods we should be careful not only to avoid giving drugs to the mother which might be eliminated by the milk, but should also closely watch the infant for signs of digestive disturbance, which may be at once corrected by withdrawing for a time the mother's breast. A sedentary life, with abundance of rich mixed food (provided the woman has a strong healthy digestion), appears to increase the total solids and decrease the water. This increase is almost always in the fat and albuminoids rather than in the sugar and ash; in fact, the marked variations in human breast-milk are almost always shown in the fat and albuminoids. Hence our attention must almost invariably be directed to correcting the fats and albuminoids. This is fortunate, as we know of no especial treatment, except on very general principles, by which we can alter the proportion of sugar or salts to the other constituents; in managing human breast-milk, then, we treat almost universally the fat and the albuminoids. A meat or rather nitrogenous diet in the woman increases the fat in her milk. Our knowledge of physiology also indicates that much fat eaten by the woman tends rather to lessen the fat in her milk. Hence, to increase the proportion of fat in a woman's milk, give much meat and only a moderate amount of fat. The albuminoids are more difficult to deal with; they have a tendency to increase both in very poor, very bad, and very rich milk. The problem with them which we have to solve is almost always how to decrease them, no matter what the milk is. Our knowledge, unfortunately, concerning a sure means of reducing the albuminoids is very limited. Practically, however, I have found that where the woman is in good health, it is physical exercise which we must insist on, preferably walking in the open air, and within the limits of fatigue. An average of from one to two miles twice daily I have found to be about what the average healthy woman in New England needs to reduce her albuminoid percentage."

Dr. Victor C. Vaughan[2] formulates the following propositions after a chemical study of the summer diarrhœas of infancy:—

(1.) *There are many germs, any one of which, when introduced into the intestines of the infant, under certain favourable conditions may produce diarrhœa.*

As has been stated, many different germs have been found in the intestines of infants suffering from summer diarrhœa, and we now find that three species of these are capable of producing chemical poisons, which induce effects substantially identical with the symptoms observed in the infants, and it is not unreasonable to suppose that many other of these germs produce similar poisons.

(2,) *Many of these germs are probably truly saprophytic.*

A germ growing in the intestine does not necessarily feed upon living tissue. The food in the duodenum before absorption has no more vitality than the same material in the flask. Moreover, the excretions poured into the intestines from the body are not supposed to be possessed of vitality. A germ which will grow upon a certain medium in the flask and produce a poison will grow on the same medium in the intestine and produce the same poison, provided it is not destroyed by some secretion of the body.

(3,) *The only digestive secretion which is known to have any decided germicidal effect is the gastric juice ; therefore, if the secretion be impaired, there is at least the possibility that the living germ will pass on to the intestine, will there multiply, and will, if it be capable of so doing, elaborate a chemical poison which may be absorbed.*

There is no longer any doubt that the acid of the gastric juice has a marked germicidal effect upon many micro-organisms.

The chief reason why the breast-fed child has a better chance for life than the one fed upon cow's milk, lies in the fact that the former gets its food germ free ; but a second is to be found in the larger amount of acid required to neutralize cow's milk, as has been pointed out by Escherich. The gastric juice is the physiological guard against infection by way of the intestines.

(4,) *Any germ which is capable of growing and producing an absorbable poison in the intestine is a pathogenic germ.*

(5,) *The proper classification of germs in regard to their relation to disease cannot be made from their morphology alone, but must depend largely upon the products of their growth.*

If these deductions be true, we will try to avoid the introduction into the alimentary canal not only of the so-called specific pathogenic germs, but of all toxicogenic micro-organisms.

Dr. Weiss[3] advises **Subcutaneous Injections of Salt Solution** in cholera infantum.

A $\frac{6}{10}$ths per cent. solution of salt was first used in four cases of cholera infantum, two dying and two recovering. To the solution was added a little alcohol. The solution was sterilized, and kept at a temperature of 39° to 40° C. The apparatus used was a glass funnel with a rubber tube, one and a half mètres long, to which a cock was attached, the end of which fitted into the cannula connected with a small trocar. In place of the foregoing, one may use for children a small syringe, holding about 20 grammes, to which a long aspirating needle may be attached. The transfusion was made into the skin of the abdominal wall, and absorption was assisted by massage over the point of in-

jection. For infants, 30 to 55 centimètres is a sufficient quantity for injection, and it could be repeated if collapse rendered it necessary. No unpleasant phenomena are likely to accompany the injections.

Dr. Moncorvo[4] uses **Salol** in the treatment of diarrhœa of malarial origin in children. The following are his conclusions : (1,) Salol may be considered a valuable agent for intestinal antisepsis in children of any age who are affected with enteritis or entero-colitis of malarial origin ; (2,) The intestinal flux diminishes and then disappears under the influence of salol, its deodorizing effect upon the stools becoming manifest almost immediately after its use is begun ; (3,) The gases resulting from intestinal fermentation are not produced as long as salol exercises its antiseptic action. The colic and vomiting also cease in a very short time ; (4,) The drug is well tolerated by children of all ages, and in none of the author's cases did it produce the least sign of intoxication ; (5,) The doses employed varied from 15 centigrammes to 2 grammes in twenty-four hours, according to the age and gravity of the case.

Dr. L. G. Broughton[5] employs **Zinc** and **Sodium Sulpho-Carbolate** in the treatment of cholera infantum.

In mild cases, use something like the following to a child from one to two years :—

℞ Hydrag. Chlor. Mitis. gr. j | Sacch. Pepsin. gr. xix
Sodii Sulpho. Carb. gr. xx |
Ft. et div. in chart. No. x. Sig.—One every three hours.

If there is much irritation about the stomach, use a ¼ of a grain of zinc. sulpho. carbolate and 3 grains of bismuth salicylate to each dose, instead of the sodium. If the case be very severe, and there is danger of immediate death, and the discharges are very profuse and watery, use :—

℞ Bismuthi Salicylatis ʒij | Tr. Opii Camph.
Zinci Sulpho. Carb. gr. iv | Aquæ āā ʒss
Mist. Cretæ ʒj |
M. Sig.—ʒj every two hours until the bowels are controlled.

Dr. Arthur P. Luff[6] in considering the anti-fermentative treatment of infantile diarrhœa advises the soluble **Biniodide of Mercury**, which renders the milk ptomaine, insoluble, and inert. He claims the following advantages of the biniodide over the bichloride of mercury :—(*a*,) The soluble biniodide of mercury precipitates the milk ptomaine tyrotoxicon by forming an insoluble double iodide with it—bichloride of mercury is powerless to precipitate the milk ptomaine ; (*b*,) The soluble biniodide of mercury is a much more powerful antiseptic than the bichloride of mercury ; (*c*,) The soluble biniodide of mercury is a safer drug than the bichloride of mercury, in that it is more rapidly

eliminated from the system than the latter preparation. This is explained by the facts that the bichloride of mercury after it has passed into the circulation becomes converted into insoluble or partially insoluble compounds, both by the albumen and by the carbonate of soda of the blood (an albuminate of mercury and a carbonate of mercury being respectively formed), and that in consequence the mercury becomes deposited in the various tissues, and so, by not being speedily eliminated from the system, may produce toxic effects. This disadvantage is not possessed by the soluble biniodide of mercury, which is not precipitated either by the albumen or by the carbonate of soda of the blood, so that there is consequently no danger of its being deposited in any of the tissues ; and, as a matter of fact, after absorption into the circulation, it is rapidly eliminated by the kidneys. It is prescribed as follows :—

℞ Liq. Hydrarg. Perchlor.	♏xij	Potass. Iodid.	gr. ¾
Choral. Hydrat.	gr. j	Aqua ad.	ʒj

This forms the teaspoonful dose, which in the case of infants up to six months of age may be given every four hours, and for infants from six to twelve months of age every three hours ; children more than one year old may take 2 teaspoonful doses. This mixture contains the biniodide of mercury dissolved in the excess of iodide of potassium as a soluble double iodide of mercury and potassium ; every teaspoonful of the mixture contains $\frac{1}{50}$th of a grain of biniodide of mercury.

Dr. Thomas[7] employs **Lactic Acid** in green diarrhœa believed to depend on a bacillary infection, but he states, also, that it is of use in cases of gastric or gastro-intestinal dyspepsia without fever, characterized by vomiting and flatulence, and by diarrhœa of non-slimy fœtid, yellowish or greenish stools containing undigested curds. The prescription used was a solution prepared as follows :—

℞ Lactic Acid	2 parts	Water	85 parts
Simple Syrup	15 parts		

One teaspoonful should be given from a quarter to half an hour after each meal ; if given sooner the acid is liable to cause rapid coagulation of the milk in large solid curds. In mild cases he found 5 or 6 doses a day sufficient, but in acute cases he gave it much more frequently.

Dr. Henry Koplik[8] has contributed an exhaustive article upon *Milk Sterilization.* The acid fermentation of milk is brought about chiefly by a species of micro-organisms called by the author Hueppe, who studied its growth and behaviour, the bacillus of lactic acid fermentation. The milk as it reaches the purchaser is very rich in micro-

organisms, but this one alone is chiefly responsible for the sour reaction of spoiled milk. This microbe is of small oval form, occurring singly and in pairs.

The most important lesson to be learned from his experiment is that milk well sterilized by steam with any apparatus (Koch, Soxhle, Escherich, Arnold steam cooker) will after a time decompose with an alkaline and no acid reaction. The time at which macroscopic changes appear has been regarded by some authors as the surest sign of decomposition, but they have mostly, even in late times, talked of the milk becoming sour, as it does not undergo acid fermentation but alkaline fermentation. True, the alkaline fermentation has not been investigated to such an extent that we can with certainty pass upon the deleterious or non-deleterious effect upon infants of the products of this decomposition. It is enough that it takes place, and certain alkaloid elements are surely produced, but very slowly, and if the milk is steamed, as in the household, daily, may be disregarded ; but the storage of sterilized milk and its subsequent use, after prolonged periods, is to be strongly discountenanced.

In a joint paper by Professor Leeds and Dr. E. P. Davis[2] the former describes the starch-liquefying ferment in milk which renders starch paste entirely fluid and capable of passing through a filter. This ferment is coagulated and destroyed by sterilization, which also has the effect of rendering the casein less readily coagulable by rennet. The peptic and pancreatic digestion of sterilized milk (that is sterilized at 100° C.) is less complete than that of raw milk. Professor Leeds believes that milk may be rendered "practically sterile" by heating to 68° C. (155° F.) for six minutes without suffering any important diminution in its digestibility ; ordinary commercial milk being always more or less acid on delivery, it is necessary before sterilizing in this way to neutralize or render it slightly alkaline with carbonate of soda or lime water. A still more advantageous method is said to be sterilization and peptonization at the same time, "the proteid matter of which the micro-organisms are composed being digested away and their vitality destroyed." This is effected by maintaining the peptonizing mixture at 155° F. for four minutes.

It was found by Dr. Davis that while hospital infants fed on sterilized milk were often relieved from acute intestinal disorders, nutrition did not improve, and the infants died in a few weeks of malnutrition. Infants removed to a different atmosphere and given fresh raw milk, rapidly improved.

REFERENCES.—[1] "Archiv. Pediatrics," Nov. 1890; [2] Ibid., Nov. 1890; [3] "Jahrb. f. Kinderh.," xxxi. 1, 2 ; [4] "Rev. Mens. des Mal. de

l'Enf.," Oct. 1890 ; [5] "Ther. Gazette," 1890, p. 741 ; [6] "Lancet," Dec. 20, 1890 ; [7] "Rev. Méd. de la Suisse Rom.," No. 11, 1890 ; [8] "Archiv. Pediatrics," June 1891 ; [9] "Amer. Jour. Med. Sci.," June, 1891.

Synopsis.—(Vol. 1890. p. 217.) **Naphthalin** in doses of 0·5 grammes, four or five times a day for adults, and for children of from one to two years 0·12 to 0·18 grammes four times a day. The drug should not be given for longer than ten to fourteen days.

Small doses of **Iodoform** have arrested tubercular diarrhœa, and in similar cases **Lactic Acid**, in doses of 30 to 120 grs. daily, has sometimes proved useful.

(Vol. 1890, p. 219.) **Glycerine Injections**, several being used of ℥ij each. **Salicylate of Bismuth**, in mixture, 4 to 5 parts by weight to 100 parts of water, with 10 to 20 parts of glycerine, or better, in syrup or mucilage, with a little red wine, a dessertspoonful being given every two hours, or oftener if required in cases of flatulence, with great gaseous distension, or where the stools have a markedly offensive odour. In summer diarrhœa of infants, a full dose of **Castor Oil**, or if stomach be irritable, **Calomel**, removes bacteria from intestine, and this should be followed by thorough irrigation of the large intestine with sterilized warm water by means of a long tube introducing a quart of water at a time, and repeating the irrigation every three, four, or five hours, according to the case. **Salol** is especially indicated in the first stage of gastro-enteritis, and in the more chronic forms of entero-colitis accompanied by slimy, bad-smelling motions. For children under six months, **Salol**, gr. ss, every two hours, for three or four doses, is sufficient ; between six and eighteen months, ½ a gr. to 1½ ; at two years; 1½ to 2 grs. In chronic catarrh it is given in somewhat larger doses, before meals. ℞ Naphthalin 2·00 to 4·00 grammes, Sacchari alb. 2·00 to 4·00 grammes, Bergamot Ess. ·03 gramme. Ft. pulv. et div. in chart. No. xx. Sig. j every two hours. **Stomach Washing** is advised for dyspepsia of infants with regurgitation of food soon after each meal ; in acute gastro-intestinal catarrh, or cholera infantum, as soon after vomiting begins as possible ; in chronic catarrh of the alimentary tract.

(Vol. 1891, p. 140.) **Carbolic Acid, Creasote, Resorcin, Salicylic Acid, Salicylate of Soda, Naphthol** and **Salol** have been tried. Weak solution of **Mercury Bichloride** when stools are very slimy. **Mercury Biniodide**, gr. $\frac{1}{50}$, dissolved in **Potassium Iodide**, combined with **Chloral Hydrate**, gr. 1. **Glycerine** and **Borax** to check excessive fermentation of food in intestine. ℞ Glycerine of Borax, ♏ 20 ; Tincture of Orange, ♏ 3 ; Distilled Water to ℥j. Sig. every one, two or three hours. Antiseptic washing of teats of nurse, and also those of bottles, and sterilization of milk, and even washing out child's mouth after nursing, together with internal use of **Calomel** and **Naphthaline**. ℞ Naphthaline (pure) 1 grm., Mucilago. Acaciæ, Chamomile-flower water āā. 40 grm., M. Sig. A teaspoonful every two hours, or for use in rectal injection. ℞ Naphthaline 1 grm., Aq. Destill. 50 to 100 grms. Boil until milky, add Chamomile-flower water 500 to 1000 grms., and let it cool to 98·5° Fh.

Hydronaphthol, gr. 2 to 3 every two hours in diarrhœa ; for children, under one year gr. ½, and for older children gr. ½ to 1 every one or two hours. **Lactic Acid**, Dose, gr. 150 to 200, in large quantity of water, and sweetened with syrup. **Arsenite of Copper**, gr. $\frac{1}{100}$ dissolved in water, ℥vj. Sig. A teaspoonful every ten minutes for first hour, and every hour after.

(Vol. 1891.) Aerocomia Sclerocarpa flowers as astringent (p. 7). Nux Moschata, ℥ss in milk for summer diarrhœa (p. 44).

Hill and Tropical Diarrhœa.

(Vol. 1890, p. 218.) Peptonized Milk, Pepsine, Ingluvine, and Liquor Pancreaticus after meals are useful. Liq. Hydrarg. Perchlor. in ℥ss doses, twice or three times a day, or in 10 minim doses every hour during part of the first day of treatment. An exclusively Milk Diet has been used, without drugs, giving 2 to 4 quarts of milk during twenty-four hours, and nothing else of any kind.

DIETETICS. *Frank J. Wethered, M.D.*

Sir William Roberts[1], in an admirable address delivered at the opening of the current session of the Manchester Medical Society, gives some useful hints on the management of diet. He said that in the dietetic customs of civilized races two distinct indications are aimed at. One is to subserve the needs of general nutrition, and the other is to subserve the needs of the higher functions of the brain and nervous system. As regards the diet in disease, Sir William Roberts said there are two great classes of patients. In one set the patient is seriously ill, and unable to take ordinary diet. As a rule, there is no difficulty in dealing with such patients, the indication being obvious. In the second class the patients question the doctor anxiously as to what they should eat, drink, and avoid. In reference to such cases, we cannot do better than quote Sir William Roberts' own words :—

"There is, I think, one very good rule in regard to the regulation of the diet in cases where there are no special indications to fulfil, and that is to put two questions to the patient when he inquires whether he may take this or that article of food, namely, Do you like it? and, Does it agree with you? If the answer be in the affirmative, there is no intelligible reason why the use of that article should not be sanctioned. Such a rule is so plain and simple, and so obviously consonant with good sense, that it might scarcely appear worth while, or even dignified, to make formal mention of it, and I would not have done so had I not been satisfied, from actual experience, that it is constantly violated.

"The indications of the palate are of great importance in the regulation of the diet, and should always be inquired into and carefully considered. The palate is placed like a dietetic conscience at the entrance gate of food, and its appointed function is to pass summary judgment on the wholesomeness or unwholesomeness of the articles presented to it. It acts under the influence of a natural instinct, which is rarely at fault. This instinct represents an immense accumulation of experience, partly acquired and partly inherited. It is, of course, not infallible—no instinct is—but so close and true are the

sympathies of the palate with the stomach and the rest of the organism, that its dictates are entitled to the utmost deference as those of the rightful authority in the choice of food."

Another point to which the speaker drew attention was a change of diet, which he considered to be as refreshing as change of air. A readjustment of the quality of the meals has often the happiest effect.

Again, when certain articles disagree, it is better to lessen the quantity than to forbid.

Sir William Roberts went on to say, "If fruit and vegetables prove difficult of digestion, it is certainly unwise to prohibit them altogether. It will generally be found that if the quantities are reduced to a certain level they can be tolerated and enjoyed. The antiscorbutic properties of fruit and vegetables cannot be safely foregone ; and a very small proportion suffices to fulfil this indication. I may again refer to the use of potatoes. People do, no doubt, sometimes unduly stuff their stomachs with potatoes, which the organ finds difficult to deal with. But many persons cannot enjoy, or scarcely eat, their dinners without potatoes, and to abstain from them is a great privation. Nor is this necessary ; a reduced allowance solves the dilemma perfectly."

The last point to which the speaker referred was the necessity for a revision of the diet to meet those changes in the type of nutrition which naturally take place as the individual travels on from youth to age.

In regulating the diet of substantially healthy persons, it is imperative to beware of hard-and-fast lines. Cases of this group are very diverse ; scarcely any two are exactly alike, and their management is complicated often by moral and social considerations which are difficult to justly estimate. We can only hope to avoid serious errors by a patient investigation of each particular case, and by bringing to bear upon it a full knowledge, combined with a large infusion of common sense.

Dr. J. Boas[2], in a paper on "Dietetic Rules in Diseases of the Digestive Organs," deals generally with dieting in stomach and intestinal disorders.

In considering diet in such conditions, three points must be looked to : (1,) The constitutional condition and the state of nutrition of the patient ; (2,) The surroundings and customary habits of the patient ; thus, the dietetic treatment of the workman must be considered from another standpoint than that of the well-to-do ; (3,) The most important point is the prescription of diet with the actual disturbance of digestion in view. The stomach, for example, gets out of order in two of its functions—the motor and the chemical ; absorption in the

stomach plays a very small part in the functions of the organ, so that an endeavour must be made (by the use of the stomach sound) to discover (1,) Whether there is a disturbance of the gland function, and whether there are fermentative processes going on ; (2,) Whether the motor activity of the stomach is at fault, or (3,) Whether both these conditions are present. There are cases, for example, in which the stomach seems incapable, owing to deficiency of gastric juice, of digesting proteids ; in these cases the digestion of carbohydrates may be perfect. Proteids in these cases must, therefore, be given in a prepared or semidigested form (albumen, peptone). In these cases fat is digested with difficulty, or, rather, is split up into fatty acids by the fermentation in the duodenum, and so does not enter the lymph channels in the usual form of an emulsion of neutral fat. **Sodium Chloride** is useful in these cases, since it helps to form the hydrochloric acid of the stomach, which tends to stop fermentative processes. On the other hand, there are cases where there is hyperacidity in the stomach. In these cases proteids are exceedingly well digested, and carbohydrates but feebly acted upon, so that the digested forms, such as **Dextrines, Malted Foods**, etc., have to be prescribed. For insufficiency of the motor activity of the stomach, enemata of half a litre, with a proper diet, are beneficial.

REFERENCES.—[1] "Brit. Med. Journ.," Oct. 18, 1890. [2] "Deut. med. Zeit.," No. 43, 1890.

DIGESTIVE SYSTEM (Diseases of). *Prof. Dujardin-Beaumetz, M.D.*

I desire to lay before the medical public the successful results which have been obtained from antiseptic cleansing of the large intestine in the case of certain affections of this portion of the alimentary canal.

Cantani, who was one of the first to insist on the usefulness of this method of therapeutics, gave to it the name of "enteroclysm." In his first observations he maintained that it was possible by means of simple fluid pressure, the patient being placed in a horizontal position, not only to penetrate into the large intestine, but also to cause the liquids to pass the ileo-cæcal valve, and he quoted cases in which injections of oil caused the patient to eject oily vomits. Without going so far as Cantani, I believe, nevertheless, that it is possible to reach very high parts of the large intestine.

The apparatus proposed by Cantani was of the simplest description, and he gave it the name of "enteroclyseur" (*τὰ ἔντερα*, intestines, *τὸ κλύσμα*, a clyster). It consisted of a reservoir communicating with a cannula by a caoutchouc tube; and the liquid was made to enter

the large intestine by raising the reservoir and so increasing the pressure.

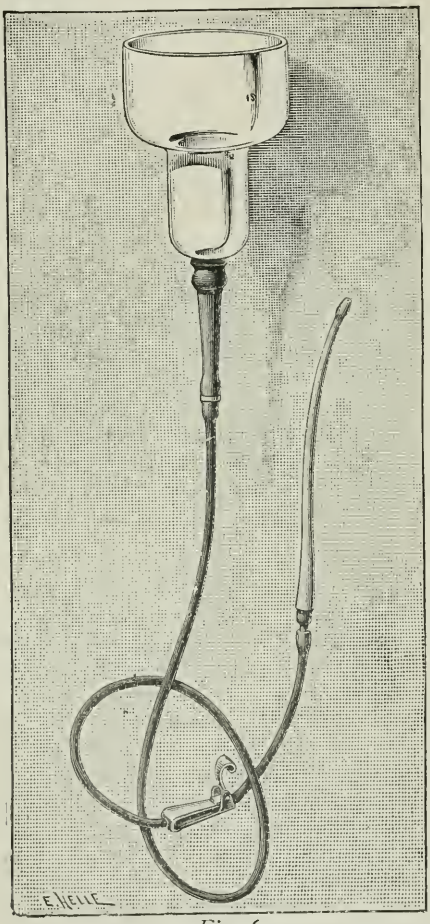


Fig. 6.

The apparatus which I use (*Fig.* 6) has been made under my own direction by Galanté, and is very similar to that described by Cantani. It consists of a glass funnel, a flexible caoutchouc tube provided with a clip, and a cannula made of pliant caoutchouc. The cannula is passed as far as possible into the intestine, and the flow of liquid is regulated by raising or lowering the funnel. The capacity of the latter is one litre, and this quantity is usually sufficient for a single injection of the large intestine.

It is essential that the patient should be placed in as horizontal a position as possible, and it would even be preferable if the buttocks were raised slightly higher than the trunk.

I generally use solutions of naphthol, and prefer **α Naphthol** as being the most soluble and the least tonic—the strength used should be 0·25 cgrm. per litre of water. I also sometimes employ tincture of iodine, of which 10 to 20 grammes should be added to one litre of water.

It is, of course, understood that the injection should not be retained

in the intestine, and that after a few minutes the patient should vent the liquid injected.

Thus far I have endeavoured to describe the very simple manual operation of cleansing the large intestine ; it now remains for me to point out the cases in which it is to be employed.

There are primarily three classes of affections of the alimentary canal, in which such washing out of the large intestine is calculated to be highly beneficial, viz., cases of dilatation of the large intestine, of cancer of the rectum, and of mucous or pseudo-membranous enteritis.

Since Bouchard taught us the great pathological importance of the *rôle* played by dilatation of the stomach, attention has been directed to these enlargements of the stomach and intestines, and Vraston, Malebran, and myself have shown firstly that, besides dilatation of the stomach, there also exists a dilatation of the large intestine capable of producing the same general disorders as the former ; and secondly, that as there may arise symptoms of intoxication due to the noxious fermentations occurring in the stomach, so also the presence of putrid fæcal matter in the large intestine may give rise to analogous toxic phenomena, of which neurasthenia is one of the most common symptoms. In some cases these affections occur separately, sometimes, on the contrary, they may exist simultaneously.

The distinctive signs of this dilatation of the large intestine are rumbling noises occurring throughout the length of the large intestine, and above all, in the ascending and transverse portions of the colon, together with foul and putrid stools, and in some cases diarrhœa, in others constipation.

Thanks to the labours of A. Gautier, and to the valuable discoveries of Bouchard and his school, we are aware that it is the poisons elaborated by the economy or introduced in the food which are the primary cause of all the observed phenomena, and that in order to combat such a condition it is necessary to use antiseptic treatment of the intestine.

These antiseptic measures embrace the use of a special diet, together with antiseptic drugs which act upon the higher portions of the alimentary canal.

As to food, I employ a vegetable diet of the following nature : the patient is to be fed on eggs, farinaceous food, green vegetables, and fruit.

A.—The eggs are to be cooked in every possible way.

B.—Farinaceous food—potatoes, kidney beans, and lentils in the form of thick soup or mash—revalenta arabica, confection of raisins,

milk thickened with flour—boiled gruels of wheat, rice, maize, barley, oats —vermicelli and macaroni.

C.—The green vegetables are to be well cooked (stews of carrots and turnips, julienne soup, boiled lettuces and spinach).

D.—The fruit is to be stewed, or in the form of jam, except strawberries and grapes.

As to meat, I only allow very thoroughly cooked meat and meat-jellies, such as *bœuf à la mode*, veal jelly, chicken boiled with rice, stewed poultry or mutton, head of veal or braised beef.

I entirely prohibit underdone meat, and, above all, game, fish, shell or rock-fish and green cheese.

For drink, I recommend either milk or white wine mixed with *eau d'alet*.

For antiseptics, I recommend the following prescription :—

℞ Salol | Bicarbonate of Soda āā 10 grms.
Salicylate of Bismuth |

Divide into thirty doses ; the patient to take one dose before breakfast and dinner.

Salol is at present the best intestinal antiseptic ; it is not an irritant, and does not decompose to form phenol and salicylic acid until it has reached the middle of the intestine. I much prefer it to the α and β naphthols, which are always irritant, reserving these for intestinal injections. Besides the above-mentioned remedies for cases of dilatation of the large intestine, I also recommend that the intestine be cleansed with naphthol, where practicable, every morning. With regard to cancer of the rectum, it is known that surgery has multiplied operations for the more or less complete ablation of the parts infected by the neoplasm. I believe that, previous to having recourse to such operations, it is desirable to try the effect of intestinal antiseptics. During the last two or three years I have had under my care a certain number of cases of cancer of the rectum, in which I did not indeed effect a cure, but produced a highly satisfactory state of health, the patients even gaining weight.

I believe neoplasms of very slow growth occur in the rectum analogous to those observed in the uterus, and which take many years to develop.

If these neoplasms of the rectum have not too great a tendency to invade neighbouring organs, and if, at the same time, they have a channel wide enough for the passage of fluid fæcal matters, it is possible by using vegetable diet, salol, and enteroclysm to keep the patient in tolerable health ; gentle laxatives must also be given to

avoid the accumulation of fæcal matter and intestinal obstruction, the accident most to be feared in such cases.

But when these conditions are fulfilled, we may hope to prolong the life of the patient for months or even years.

Finally, in the disease which is still but little known, described under the name of mucous or pseudo-membranous colonitis, good results may also be obtained from enteroclysm. In this disease, the patient sometimes passes mucus, sometimes membranes consisting of mucous and epithelial *débris*; the latter sometimes being very abundant, and pointing to a shedding of the mucous membrane of the large intestine over a considerable area. This disease is more common with women than with men, and offers obstinate resistance to our ordinary therapeutic agents. In these cases, I use not only naphthol but also **Chlorate of Potash,** and above all, tincture of **Iodine.** The best results are obtained with the latter drug, as I mentioned above. I order at first 10 grms. of tincture of iodine to 1 litre of water, and I afterwards gradually increase the dose to 20 grms. In addition to this treatment, I order vegetarian diet, salol and salicylate of bismuth, and by these means I have obtained in a certain number of cases improved conditions—I do not say cures—of a highly satisfactory nature.

Such are the points to which I desire to call the attention of my colleagues. I believe that this treatment may be extended to a large number of other affections, but I wished to-day merely to indicate the points which have seemed to me most noteworthy, and which I hope are not devoid of interest.

DIPHTHERIA. *Henry Dwight Chapin, M.D., New York.*

Etiology and Pathology.—Dr. Löeffler[1] submits the following propositions :—

(1,) The cause of diphtheria is the diphtheria bacillus, which is to be found in the product of the diseased mucous membranes.

(2,) With this excretion of the mucous membrane the bacillus is cast forth from the individual. It may be deposited upon anything which happens to be in the neighbourhood of the sick individual.

(3,) Diphtheria patients pass bacilli which are capable of producing infection, as long as there is the slightest trace of a deposit upon their mucous membrane, and for some days after all deposits have disappeared.

(4,) Patients with diphtheria should be very carefully isolated, as long as there are any bacilli in their secretions.

(5,) The bacilli of diphtheria will retain their vitality in portions of membrane for four or five months. Hence everything which has been

in contact with diphtheritic patients should be boiled, or disinfected with steam at 100° C. The sick-rooms should also be thoroughly disinfected. The floors should be scrubbed with sublimate solution (1 to 1000), and the walls of the room should be thoroughly rubbed with bread.

(6,) Investigations concerning the vitality of the bacilli of diphtheria in moist media have not yet been concluded. Their vitality is probably retained longer in a moist than a dry medium. Damp and dark dwellings are especially favourable for the development of the diphtheritic virus. Such dwellings should therefore be made dry and thoroughly permeable to air and light. Especially when one is making a change of residence should the latter be disinfected, if there is any suspicion that it has been exposed to diphtheria.

(7,) The bacilli will thrive outside the body at a temperature of 20° C. They will develop readily in milk; hence one cannot be too careful in securing purity of this article of food. The sale of milk in buildings in which there have been cases of diphtheria should be prohibited.

(8,) Diseases which resemble diphtheria, and which occur in pigeons, dogs, and calves, are not caused by infection with the bacillus of human diphtheria. Therefore these diseases in animals need not be feared as a possible cause of the analogous disease in human beings.

(9,) The views of Klein in regard to the etiological identity of the disease which has been observed in cats with the diphtheria of human beings have not yet been substantiated.

(10,) Lesions of the mucous membranes of the primæ viæ favour the reception of the diphtheritic virus. Susceptible individuals may contract diphtheria without the assistance of such lesions.

(11,) When diphtheria prevails, one cannot be too careful to keep the oral, nasal, and pharyngeal cavities of children thoroughly clean. As a means of prophylaxis, it is recommended that rinsings and gargles be practised with aromatic water, or a weak solution of sublimate (1 in 10,000).

(12,) The influence of certain meteorological factors in causing the spread of diphtheria has not been definitely proven.

To prevent the expectoration of particles of membrane into the face of a physician while examining, Dr. Hale White has introduced a tongue spatula with a mirror as shown in *Fig.* 7 on next page.

Dr. Ménard[2], of St. Ives, states that clinical observation and pathological-anatomical investigation have shown that diphtheria in birds differs absolutely from the fibrinous membrane of diphtheria in human beings. Diphtheria in birds, though very contagious, is never transmitted to man.

Brieger and Fränkel[3] consider certain investigations concerning the poisons which are generated by bacteria. In the opinion of Löeffler, which coincides with that of Roux and Yersin, this poison is a form of diastase. Brieger and Fränkel have endeavoured to ascertain the nature of this poison. They took diphtheritic membranes obtained from twenty-two patients, the specific character of which was determined by microscopic examination, by cultures, and by inoculations. The cultures were sterilized by heat, and by filtration with Chamberland's apparatus. By saturating the sterilized cultures with ammonium sulphate, a precipitate was obtained which was insoluble in alcohol but soluble in water, which gave the reaction of the biuret, and appeared in the form of a white, amorphous, granular mass, giving in most respects the reactions of albuminoid bodies. Brieger and Fränkel did not hesitate to consider this substance as a derivative of albumen, which had a close relation with serum-albumen. They considered it a tox-albumen. This substance was found to be very poisonous, and was fatal to animals which were inoculated with it in doses of 2½ milligrammes to each kilogramme of weight of the animal. In smaller doses it produced the same phenomena and the same lesions as sterilized or nonsterilized cultures, but without the production of false membranes. Roux and Yersin have also observed that the diphtheritic poison is a soluble ferment, a diastase, the dialyzing property of which explains its diffusion in the organism.

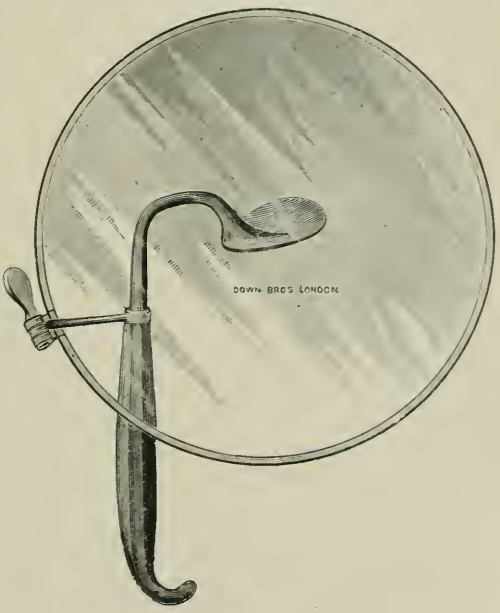


Fig. 7.

Roux and Yersin[4] state that culture experiments will enable one to

recognize in twenty-four hours the nature of a doubtful case of diphtheria. The material is to be obtained by gently scraping the surface of a membrane and inoculating two or three tubes containing serum. After subjection of the tubes to a temperature of 35° C. for twenty-four hours colonies of Löeffler's bacilli will appear. Thus a very useful means of diagnosis is furnished. Of eighty children in a diphtheria hospital ward, sixty-one gave evidence of the presence of Löeffler's bacillus. Of this number, thirty died and thirty-one recovered. The other nineteen cases, in which no bacillus was found, all recovered.

The prognostic value of such experiments is not always decided. There is no constant relation between the virulence of the bacilli and the gravity of the diphtheria. The virulence would seem to diminish as the case approaches a cure. If in two successive examinations there is an evident diminution in the number of Löeffler's bacilli and an increase of other less harmful microbes, a cure may be expected. A false membrane which is kept dry and removed from air and light will contain bacilli of full vitality at the end of five months. With reference to pathogenesis, the authors have recognized in the mouths of healthy and diseased children a pseudo-diphtheritic bacillus which does not differ perceptibly from the attenuated bacillus of Löeffler.

Dr. Torensen[5] considers that, from a clinical standpoint, a distinction can be made between scarlatinal and ordinary diphtheria. In scarlatina, the morbid deposit is of a yellow colour, of the consistency of thick soup ; there is a characteristic tendency to suppuration which frequently leads to perforation of the anterior palatal arch. The glandular swellings often result in phlegmon and extensive destruction of the skin; the process extends not only along the surface but into the deep tissues; the ear is often involved, likewise the larynx, and the febrile movement shows a close relation with the local process. The exudation is located within the tissue rather than upon its surface ; the tissue of the tonsils is necrotic superficially, and in the tissues there are quantities of micrococci, not alone in the necrotic portions of tissue, but in the deeper layers, and in places in which only slight changes, to all appearances, have occurred. These cocci are also found in organs which have been brought into sympathy with the morbid process, especially in the spleen. Scarlatinal diphtheria, therefore, has not only a clinical but also an anatomical and microscopical character of a lesion which involves the entire organism. In very acute cases, or in those in which the disease seems to concentrate itself upon a single organ, the micro-organisms are found only in those parts which are primarily attacked, while in those cases which run a less rapid course they are found in distant organs, especially in those

cases which show a decidedly septic character. The constant presence of these cocci indicates a decided relationship between them and scarlatinal diphtheria. They resemble the streptococcus pyogenes of Rosenbach, and the coccus of erysipelas, but are somewhat larger than the latter. In none of the cases of this disease investigated by the author has he found a bacillus resembling the bacillus of Löeffler. That scarlatinal diphtheria has no relation with true diphtheria is also shown in the fact that scarlatinal patients and convalescents are not susceptible to infection from diphtheria. The author does not believe that scarlatinal diphtheria means ordinary diphtheria complicated by scarlet fever, neither does he admit that scarlatinal diphtheria is scarlet fever complicated by a purulent infection, because the diphtheritic and suppurative processes in the former disease are so closely united both clinically and anatomically that they cannot be separated, and because the micrococci are found in great numbers in the tissue affected by the diphtheritic process and in the collections of pus. Scarlatinal diphtheria is believed to be a distinct scarlatinal process, not only because it is of common occurrence with scarlatina, but because it often occurs at the same time and occasionally as the only symptom of the disease.

The author is inclined to believe that the cocci found in scarlatinal diphtheria may prove to be the specific virus of scarlatina.

Preventive Treatment.—Dr. T. Mitchell Prudden considered the *prevention of diphtheria* in a paper read before the section on pediatrics at the New York Academy of Medicine, April 9, 1891. He considers it may be regarded to-day as definitely established that pseudo-membranous inflammations may be due to a variety of causative agents. While it might not always be possible to determine their value on clinical or anatomical grounds, yet it probably could be with the assistance of bacteriology.

Dr. Prudden divided cases of diphtheria into two classes: first, those of true primary diphtheria, or true diphtheria, caused by the Löeffler bacillus, the general symptoms looked upon as a bacteriological intoxication. The bacillus of Löeffler located itself under the more superficial part of the mucous membrane. It might, in exceptional cases, be present on the mucous membrane, causing diphtheria without accompanying pseudo-membrane. It was tenacious of life, might remain vital for weeks or months, and might convey the disease when contained in fresh discharges or in the form of a dust floating in the air. The second form of diphtheria, or pseudo-membranous inflammation, was accompanied by a false membrane, caused by different forms of micro-organisms, as by the streptococcus. He thought the

isolated cases of a false membrane in a disease of animals need not be considered of practical importance in the study of human diphtheria. Of the two forms of diphtheria mentioned, that caused by the Löeffler bacillus was the most important. It might also have as a complicating factor the streptococcus, which might penetrate deeply into the mucous membrane, but to what extent this contributed to the symptoms of true diphtheria would have to be shown by future study. So far as prevention and treatment were concerned, it had been considered wise by many to regard true and pseudo-diphtheria as practically the same. We had now something definite to kill by our disinfectants, something positive to combat in treatment. We knew how long the germs could live under given conditions ; we knew to what agents they most readily succumbed ; how they could be conveyed from the sick to the well. As to prevention, he was disposed to place the initiative with the physician rather than with the health officer.

Two distinct things might be accomplished by the use of germicides: first, to kill the germs at the local lesions by as powerful agents as we could command ; second, to use in greater abundance and frequency milder agents, sprays, etc., which were known to prevent their proliferation.

The author spoke of personal prophylaxis in preventing spread of the disease, the disinfecting of clothing, etc. As to sulphur fumes, he again expressed his views of their inefficiency. As to the diagnosis between true diphtheria and pseudo-membranous inflammation, it could be made by biological culture method. This might be of special importance in asylums. He strongly condemned quarantining children only suspected to have diphtheria with those known to have it. They should have a special quarantine. He thought the streptococcus and staphylococcus might have much to do in causing disease of the mucous membrane, if they did not cause actual pseudo-membranous inflammation. We should not ignore individual predisposition. Any efficient prevention must take cognizance of the multiple predisposing factors prevailing in crowded towns. Germicidal disinfection and quarantine were necessary, but would not suffice alone. Hygienic surroundings would enable one to better struggle against the disease when it developed, and in warding it off under exposure.

TREATMENT.—Dr. Löeffler[6] states that two factors are to be considered in the struggle with the bacillus of diphtheria. First, the migration of the bacilli into sound tissues must be prevented or regulated by suitable medicaments applied to the mucous membrane ; second, accumulations of bacilli in the superficial portions of false membranes must be destroyed. Various substances were experi-

mented on in the laboratory, as follows: sublimate in solutions of 1 to 10,000 instantly destroyed the germs strewed upon the surface of the culture media. A 1 to 1,000 solution was required for twenty seconds to destroy bacilli which had penetrated the deep portions of the culture media. Cyanide of mercury in 1 to 10,000 solution almost instantly destroyed many of the germs upon the surface of the culture media. All of them were destroyed by solutions of 1 to 3,000. Solutions of 1 to 1,000 in contact with a bacillus culture for seventy seconds did not sterilize it throughout its entire extent. This result was obtained with solutions of 1 to 200.

Nitrate of silver in 1 to 1,000 solution, after contact for ten seconds, sterilized a culture medium at its surface for a day. A 1 to 150 solution was required to destroy the bacilli, and only after contact for twenty seconds were colonies of the bacillus destroyed.

Chloride of silver 1 to 7,500 and hyposulphite of soda 1 to 10,000 in combination were very destructive to the bacillus.

Permanganate of potash even in 5 per cent. solutions was ineffectual.

Chlorate of potash 1 to 20, lime-water in saturated solution, oxygenated water 1 to 100, sulphuric acid 1 to 12½, formic acid 1 to 100, lactic acid 1 to 100, were all ineffectual after ten seconds' contact.

Chlorate of potash 1 to 20 was also ineffectual after contact for sixty seconds.

Iodine in watery solution was useless. Iodine 5 parts, iodide of potash 10 parts, and water 300 parts sterilized cultures in twenty seconds.

Bromine in 1 to 100 watery solution destroyed germs upon the surface, but a 2½ per cent. solution for twenty seconds was necessary to completely sterilize the cultures.

Chlorine water—9,000ths gramme of chlorine to a cubic centimètre of water—destroyed germs upon the surface after ten seconds of contact. Undiluted chlorine water sterilized cultures in twenty seconds.

Chloride of lime in concentrated solution was very effective.

Trichloride of iodine 1 to 1,000 destroyed the germs upon the surface of the culture medium in ten seconds.

Absolute alcohol and ether, 2 parts of the former and 1 of the latter, with 1 part of water, produced the most positive effects instantaneously. But either of the substances used separately failed to sterilize in twenty seconds.

Alylic alcohol was only feebly germicidal.

Benzylic alcohol and chloroform sterilized in ten seconds.

Carbolic acid 1 to 100 was ineffectual. Development of the germs

was momentarily arrested by 3 and 4 per cent. solutions. A 2 per cent. solution, to which was added 20 to 40 per cent. in volume of alcohol, was quite effective, and stronger solutions were still more so.

Lysol 1 to 50 sterilized in ten seconds, the germs being strewn upon the surface of the culture media, but even 1 to 20 solution failed to sterilize the solutions completely.

The creasols gave results similar to those produced by carbolic acid.

Salicylic acid and resorcin gave only poor results.

Hydrochinone and benzoate of quinine gave fairly good results.

Various essential oils had a decidedly germicidal action, also the hydrocarburides anisol, phenetol, toluol, and benzol.

Many of the substances mentioned by Löeffler could not be used clinically on account of their toxic properties, but there are others which deserve a trial both for applications and gargles.

As means of prophylaxis, those who attend cases of diphtheria should use gargles of 1 to 10,000 or 1 to 15,000 of sublimate, or 1 to 8,000 or 1 to 10,000 of cyanide of mercury; chloroform-water, chlorine-water 1 to 1,100, thymol 1 to 500 with 20 per cent. in volume of alcohol, are also useful agents as prophylactics. Gargles of these substances should be used every three or four hours.

For inhalation one may use essence of lemon, oil of eucalyptus, anisol, phenetol, benzol, or toluol. Metallic tubes containing cotton impregnated with these substances may be introduced into the nasal fossæ and retained as long as is advisable. If the diphtheritic process is actually present the gargles referred to should be used every hour or two; in addition, gargles should be used every three or four hours with solutions of sufficient concentration to sterilize cultures of the diphtheritic bacillus, as stated in the foregoing paragraphs. Local applications should be made at equal intervals of carbolic acid 1 to 20, bromine 1 to 50, or chlorine 1 to 100.

Dr. S. J. Radcliffe[7] states that in typical diphtheria, after active local treatment by disinfectants (which must always be applied in the form of spray), which does not yield readily, his treatment is to prescribe **Sodium Sulpho-carbolate** in doses of 3 to 5 grains, at short intervals, varied according to the age of the child, and to begin at once with alcohol in the form of brandy or whisky, and keep it up constantly to the end, without regard to the condition of the pulse. He has given to a child of five years 42 ounces of brandy in seven days without the least trace of intoxication or any evil effect upon the nervous system.

Dr. J. H. Lloyd[8] advocates the use of **Chloride of Ammonium**

instead of the chlorate of potassium, which is usually given in the treatment of diphtheria. It acts as a stimulant to the mucous membrane, increasing the normal secretion, and so diluting and dissolving thick, tenacious mucous and fibrinous masses. It makes an admirable mixture with tinct. ferri chlorid. A mixture of ½ drachm each of the iron and the chloride of ammonium to 1 oz. of a thick syrup (preferably of tolu) may be administered internally every two hours in teaspoonful doses, and at the same time a soft camel's hair throat brush is to be used to apply the mixture thoroughly to the diseased parts.

Dr. H. Beyer[9] has successfully treated fifty cases of infantile pharyngeal diphtheria by the local application of a mixture of chemically pure **Methyl-blue** and **Powdered Sugar,** 2 parts of the former to 98 of the latter, controlling the fever by small doses of **Acetanilide** and sustaining the vital forces with **Extract of Beef, Eggs,** and **Milk.** The methyl-blue is entirely tasteless and free from all deleterious effects. It is applied in the following manner : The patient's head is held in a horizontal position, the tongue depressed, and from 5 to 10 grains of the powder are freely applied to the pharynx. This is repeated every two hours, or as often as new crops of exudation make their appearance. No food nor drink must be given for ten or fifteen minutes before and after the application. Washing the retronasal and nasal space with boiled water and applying the powder with the Devilbiss blower has likewise given satisfaction.

Dr. Abadie[10] recommends **Lemon Juice** the treatment of diphtheritic and diphtheroid conjunctivitis. It was used fearlessly, as it was believed to be harmless to the cornea. During the three or four days in which the disease is most threatening, it must be used every five, hours, night and day. Subsequently the intervals can be lengthened to eight, then to twelve hours, and then it can be discontinued altogether.

Dr. G. Mayer[11] advises the treatment of diphtheria by the application of **Ice** to the neck, and giving the patient cracked ice by mouth. He considers that the free use of ice, externally and internally, will do much to control this disease.

Dr. Hermann Wolf[12] has applied to the diphtheritic membrane **Menthol** rubbed up with sugar in proportion 1 to 20 or 2 to 20 for the past two years, with good results. A large camel's hair pencil is employed and the powder is applied several times daily, once by the physician, and the remaining times by parents.

Dr. W. Rosenzweig[13] advises injections of strychnine in the back of the neck in paralysis of the soft palate following diphtheria. He employed this method in four cases, the average dose being ·003 gram., repeated a few times.

Dr. Schwitzer[14] has tried the effects of a preparation obtained from **Tobacco** in the treatment of diphtheria. The fluid that he used was prepared from the tobacco residue remaining in pipes after ashes had been removed, and which was so moist as to be incapable of burning, or still better, the empyreumatic oily substance which after prolonged use collects within the interior of pipe-stems: 2 to 2½ parts of this substance were digested in 35 to 40 parts of alcohol, and then, after standing twenty-four hours, filtered, the filtrate being clear and reddish-brown in colour. This tincture was used as a local application to the throat by means of a camel's hair pencil, with good results. As an accessory, a gargle made up of infusion of tobacco leaves, 2 parts to 200 of water, was employed.

Dr. Dwight L. Hubbard[15] advises the use of **Hydrochlorate of Ammonium** in laryngo-tracheal diphtheria by inhalation. Dr. Hubbard believes that this ammonium salt is of value, in the first place, as a heart stimulant, producing better oxidation of the blood, by bringing it in more frequent contact with the inspired air; second, in relieving the spasm and œdema of the glottis; and third, in softening the false membrane. His method of employing this remedy is to place the patient in a small closed room, having a temperature of about 80° F., then generating sufficient heat to drive off copious fumes. This is continued for fifteen minutes, and repeated every hour; while after each application the room should be ventilated as much as possible without reducing its temperature.

Dr. F. Betz[16] has successfully employed **Etherization** in a bad case of croup in an infant thirteen months old. A mixture was ordered of 3 parts of sulphuric ether, 1 part of acetic ether, and $\frac{1}{10}$ part menthol, of which 3 drops were given as an inhalation on a folded handkerchief every quarter of an hour. This mixture contracts the blood-vessels, lowers the temperature of the part, decreases the œdema, lessens secretion, and allays the irritation in the larynx by the production of some amount of local anæsthesia.

Dr. G. E. Law[17] advises the treatment of pseudo-membranous laryngitis by **Mercurial Fumigation.** The apparatus consists of a tent and an alcohol lamp with arms to support a piece of sheet-iron. A good tent may be quickly constructed in the following manner: Each post of a child's crib is extended by fastening to it, in an upright position, a bed-slat. The frame is completed by cross-pieces above. Sheets to cover the frame complete the tent. The child is placed in the crib at one end, the lamp is lighted, the sheet-iron plate is adjusted and heated, and 30 grains of calomel are dropped upon it. The lamp is then placed under cover at the end not occupied by the child. The

vapour quickly rises and fills the tent. The usual time of each treatment is ten minutes, but may be varied if circumstances indicate. The attendants should be cautioned not to inhale the fumes unnecessarily, as mercurial poisoning is quite certain to result. In the patient, however, this effect does not follow.

Dr. Kellerer[18] used inhalations of **Pyoktanin** (0·05 to 100·0 aqua) in two cases of croup, both being followed by rapid improvement.

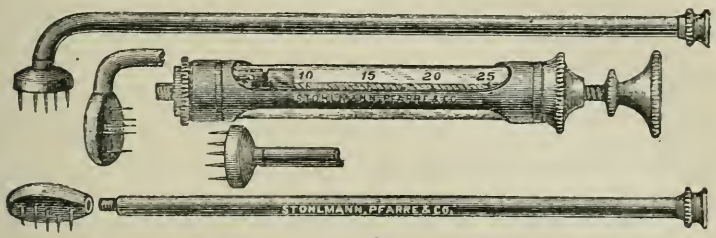


Fig. 8.

Dr. A. Seibert[19] advises submembranous local treatment (*Fig.* 8) of cases of pharyngeal diphtheria, based upon the following facts :—

(1,) Pharyngeal diphtheria always begins as a local process, usually in one or two, very seldom in three or more, distinct spots of the throat.

(2,) This diphtheritic process is caused by the action of certain bacilli (first described by Klebs and Löeffler) entering the mucous membrane and penetrating into its lower stratum, either alone or in company of other bacteria (in particular the streptococcus found by Löeffler and Prudden), where an inflammation is caused, which again results in an exudation of serum and leucocytes accumulating in the upper epithelial layer of the mucosa, thus forming the pseudo-membrane of diphtheria.

(3,) Therefore the pseudo-membrane is not the disease, but its result, and, on the other hand, a safe guide to the diphtheritic inflammation below it.

(4,) Rationally, the chief treatment should be local. The removal of pseudo-membranes is at best useless, as the bacteria lodging therein are embedded, and of no further consequence when left alone; but if swabbing out the throat is practised, numerous bacilli must necessarily be pressed into living tissue, thus not alone increasing the inflammation in parts already affected, but also inoculating the poison upon regions of mucous surface so far not infected.

In devising my syringe, my object was to bring comparatively small but very strong solutions in *direct* contact with those bacteria which

were yet in activity upon the lower stratum of the mucosa. The officinal chlorine water (U. S. P.) proved to be the strongest and safest remedy. It must be obtained fresh for each case, and ought to be kept cool and dark. A strong odour of chlorine gas proves its value.

After filling the syringe with chlorine water and pressing out the air, the instrument is introduced over the handle of a dessert-spoon into the pharynx, and the needle-points are then brought directly opposite to the pseudo-membranous patch adherent to the tonsil, the lateral or posterior wall of the pharynx. After pressing the needles to their full length through the pseudo-membrane into the inflamed tissue below, the instrument is firmly held in position by the left hand, while the right presses the fluid (usually ½ of a syringeful) into the mucosa. In very obstinate children, it may be necessary to use the O'Dwyer-Denhard mouth-gag.

The chlorine water so brought into direct contact with the *active* bacilli and cocci of diphtheria immediately destroys them, and the process comes to a standstill. It is essential that the injection should accomplish this object, because this contact of the chlorine and the *active* germs is the fundamental principle of this treatment. It is better to inject too deep than not deep enough, as the exudate coming from the inflamed blood-vessels of the submucosa will carry the fluid outward.

REFERENCES.—[1]"Med. Monat.," Oct., 1890; [2]"Rev. Mens. des Mal. de l'Enf.," Aug., 1890; [3]Ibid., Jan., 1891; [4]Ibid., Jan., 1891; [5]"Jahrb. f. Kinderh.," xxxii, 1, 2; [6]"Gaz. Méd.," June 13, 1891; [7]"Arch. Pediatrics," June, 1891; [8]"Phila. Med. News," 1890, vol. lvii.; [9]"Phila. Med. News," vol. lviii., p. 283; [10]"Rev. Mens. des Mal. de l'Enf.," Aug. 1891; [11]"Ther. Monat.," Nov., 1890; [12]Ibid., Sept., 1890; [13]Ibid., April, 1891; [14]"Centralbl. f. die Gesammte Therap.," Dec., 1890; [15]"Med. Rec.," April, 1891; [16]"Lancet," May 16, 1891; [17]"Brooklyn Med. Jour.," 1890, p. 525; [18]"Münch. med. Woch.," 1890, No. 32; [19]"Archives Pediatrics," June, 1891.

Synopsis.—(Vol. 1890, p. 229.) Caldwell recommends keeping the **Bowels open**, injection of 2 to 6 ounces of **Milk** every two hours, and **Spraying the Throat** every hour until temperature is reduced and breathing easy, then every hour, unless asleep, with ℞ Papain ℥ij, Hydronaphthol gr. iij, Ac. Hydrochlor. dil. gtt. xv, Aq. dest. ad ℥iv, M. Keeping patient in **Sulphur fumes** has given good results, also the local application of **Sulphur**. **Vlemingkx's Solution** as spray. Irrigation of mouth or nasal fossæ with **Salicylic Acid** solution, 1½ to 2 in 1000 (1—1000 to 1—1500 in children) frequently repeated. Swabbing with **Citron Juice** when membrane is very firm and thick. **Calomel** locally applied, mixed with **Powdered Starch**; cold compresses to the throat, and a mixture containing **Nitrate of Sodium** internally. As cardiac

stimulants, **Digitalis** or **Sulphate of Sparteine**, gr. $\frac{1}{10}$ four times daily, or hourly in emergency. **Alcohol, Caffein, Camphor, Strychnine**, or **Siberian Musk** (10 to 15 grs. every three or four hours in thin mucilage), **Hydrarg. Bichlor.** gr. $\frac{1}{10}$ to $\frac{1}{30}$ freely diluted with milk or water. **Hydrochloric Acid**, diluted with three or four parts of **Glycerine**, or **Glycerine** of **Carbolic Acid** locally. **Iodoform** or **Boric Acid** blown into nostrils or pharynx. Painting nostrils with solution of **Gallic Acid** 10 parts, **Distilled Water** 60 parts, and **Glycerine** 10 parts, every six or eight hours. As a gargle, **Chlorine Water** 1 part, **Distilled Water** 3 parts. Insufflation of **Powdered Sugar**, supplemented by vigorous tonic treatment. Application of plugs of **Cotton**, wetted with 20% oily solution of **Menthol** for nasal diphtheria.

(Vol. 1891, p, 144.) ℞. Ac. Salicylic 2·0; Sol. Gummi 180·0; Syr. Rub. Id. 20·0. Sig. Apply every two hours with a brush. This may be followed by ℞. Ac. Tannic. 1·0; Tinc. Iodi. gtt. 2; Aq. Dest. 188·0; Glycerine 20·0, M. Sig. Apply every three hours.

If the mucous membrane is thick, ℞ Pepsini 2·0; Ac. Muriat. 0·5; Aq. Dest. 2·0. Glycer. 15·0, M. **Tinct. Rusci Composita**; a teaspoonful every two hours. ℞. Resorcini Puriss 3·0, Glycer. 30·0. Apply with a brush hourly, and use as a spray the following: ℞. Resorcini Puriss 50·0; Aq. Dest. 1000·0. As adjuvant to above, ℞. Resorcini Puriss 10·0, Syr. Terebinth 500·0, M. Sig. Two or three tablespoonfuls in twenty-four hours. **Peroxide of Hydrogen** 60% sol., increased in strength and used internally in dose of ℥ss to ij. **Salicylic Acid** dusted into the throat. **Chloride of Ammonium** as substitute for **Chlorate of Potash**. ℞. Ammon. Chlorid., Tinc. Ferr. Perchlor. āā ℥ss., Syr. Tolu, M. Sig. A teaspoonful every two hours, and apply it to throat with brush.

Mercury Chloride 1–4000 as spray, and internally gr. $\frac{1}{25}$ to $\frac{1}{12}$ in 3 to 8 drops. Tincture of Iron every two hours. As prophylactic measures, treat catarrhs of nose and throat with **Salt Water, Boracic Acid, Nitrate of Silver**, exsection of enlarged tonsils, etc. For Diphtheritic wounds, *e.g.*, circumcised prepuce, or of vagina, **Tincture of Iodine, Iodoform Powder**, or ointment. **Lot. Hydrarg. Perch.** 1 in 1000 or 3000 locally. For conjunctival diphtheria, **Ice** and strong solution of **Boracic Acid**. **Brandy** freely used, 50 to 100 grms. daily. **Strychnine** in diphtheritic paralysis. **Iodoform** as antiseptic.

DISLOCATIONS.

F. S. Eve, F.R.C.S.

Treatment of Old Dislocations of the Shoulder-joint.—Since the publication of Sir T. Lister's paper this subject continues to occupy much attention both here and on the Continent.

Kocher[1] contributes a very practical paper. He states that: "Most of the old cases are subcoracoid, some subscapular; the axillary variety is rare as the causative trauma is severer, the symptoms and disturbances more marked. The deceptive part is the improved mobility at the shoulder, and the nearing of the elbow to the body—the arm may even hang straight down beside the trunk—as compared with fresh cases. This reduced abduction of the arm with essentially unchanged position of the humeral head depends on the stretching of the originally tense portions of the capsule and ligaments, especially of the coraco-humeral ligament and its radiations. From this it happens that in luxatio in-

veterata much oftener than in fresh dislocations there is a difference in length ; particularly in subcoracoid and subscapular dislocations he has observed a lengthening of 2–3–5 ctm.

In cases with complications, as fracture of the tubercles and border of the socket, the stiffness only increases with time.

As to the methods of reduction, that by hard pulling is blind, and liable to do as much harm as good, by tearing nerves, vessels, etc., as collectively studied by Kortl and by Stimson Less destructive is Polaillon's method, subcutaneous section of capsule and adhesions, yet also liable to do harm. Better yet, is to freely open, and to divide the capsule, not so much to free the humeral head as to make a place in the socket.

The results of resection in these old cases are not sufficiently encouraging for its general adoption. Although Ollier has described (1886) a fine functional success, the patients are, as a rule, scarcely better off than when treated orthopædically without operation. Hence Kocher limits the indications for resection to cases where no progress, or, perhaps, impairment of mobility, despite gymnastic practice, follows ; or where difficulties arise from pressure on vessels or nerves.

In contrast to these questionable procedures he recommends his own rotation-elevation method, originally applied only to fresh cases. By this means he has succeeded in reducing twenty-five out of twenty-eight old dislocations, five of them being over four months old. The various published accounts of its application in neglected as well as fresh cases are briefly noted. Although this method was again recommended by Kocher at the London International Congress, 1881, his present description of it may be worth reproducing : "The abducted elbow is slowly but forcibly pressed against the trunk in order to push the humeral head firmly against the anterior border of the socket for the subsequent rotation. To gain a surer hold for rotation it is best to shove the elbow backwards and have it as much as possible approximate the median line behind the body. With the arm flexed to a right angle at the elbow, rotation outwards is now performed, one of the operators' hands grasping the elbow, the other the wrist. This movement also is executed very slowly, opposition being gradually overcome until the forearm is directed straight outwards (laterally). If this manœuvre does not cause the deltoid to be distinctly forced up by the head of the humerus, it is advisable to assist the outward movement of the head by pulling at a compress under the arm. Carafi's proposition to wait a minute after finishing the rotation outward is entirely commendable."

Now follows the third act. Whilst the arm is held unchanged in outward rotation, the elbow is pushed forward in the sagittal plane of the body, very slowly but forcibly, as high as possible, when the outward rotation is gradually relaxed, and finally the hand is laid across the breast to the other side, *i.e.*, the arm is rotated inward.

During this whole time no single, sudden, or jerky motion is made. True, however, each of the movements must be completed with a certain force.

For the greater resistance to reposition of old in contrast to fresh dislocations depends on the added resistance of adhesions, which to be ruptured demand a certain expenditure of force.

As misfortunes in his attempts at reducing old cases by this method may be mentioned three fractures, two simply of the head of the humerus and one in the middle of the diaphysis ; but the latter was from a necessarily hasty attempt, and on an elderly woman.

In sixteen of his thirty-three successes narcosis was not employed. A table of the twenty-eight cases treated by manipulation and of eight treated by operation closes the article.

The employment of Kocher's method is certainly to be advised before undertaking an operation for reduction by Lister's method of incising the joint and dividing all structures which prevent reduction.

Thorburn[2], on the contrary, deprecates any attempt at reduction by manipulation, and sums up in the following conclusions : (1,) Forcible reduction of an old luxation is a dangerous proceeding, and should not be too vigorously attempted ; (2,) Should reduction fail, we may operate to obtain relief, the chief indications being pressure on the axillary structures, or great fixity of the limb, the only contra-indications being old age or other constitutional debility ; (3,) The best operation is that of arthrotomy, followed, if unsuccessful, by arthrectomy ; (4,) Sufficiently free incisions will usually permit of reduction after arthrotomy ; but (5,) Comminuted fracture and certain other conditions may necessitate arthrectomy, which will probably give a satisfactory result.

Dr. F. W. Gwyer reports a successful case of *Old Traumatic Dislocations of the Shoulder, Treated by Excision of the Head of the Humerus.* The patient was a woman, aged fifty-one, who sustained a subclavicular dislocation of the humerus. Reduction by manipulation failed two months after the accident. Three months after, resection was performed by Gwyer, owing to severe pain extending down the forearm into the fingers, undoubtedly due to pressure on the brachial

plexus, and very limited range of movement. He gives the following details of the operation : " On reaching the head of the bone, I found it deeply imbedded in fibrous tissue, lying close under the clavicle, to the inner side of the coracoid process, and resting upon the ribs. The greater tuberosity had been broken off, but remained connected to the head by fibrous tissue. I removed the tuberosity, and then attempted to free the head sufficiently to raise it out of the wound. This, however, could not be done, so the shaft was freed just below the surgical neck and the bone divided with a chain-saw. The neck was then grasped with a pair of strong forceps, and, after a good deal of hard work with a periosteal elevator, the knife being used sparingly, the head was finally freed and removed. The glenoid cavity was then searched for, and found filled with fibrous tissue. The wound was closed by sutures, and dressed in the usual manner. The course of repair was uneventful."

Four months after the operation the patient showed the following condition : Abduction possible to ten inches from the trunk, rotation slight, forward and backward movements quite marked, entire absence of pain, and ability to raise the hand to the forehead and pass it behind the back. She can now use her hand in dressing herself, and in eating and drinking, which she was entirely unable to do before the operation, and can perform her ordinary household work, such as sweeping, carrying water, etc., without the least inconvenience, and feels quite delighted with the result.

Gwyer[3] has collected twenty-seven cases of resection of the head of the humerus for old dislocations, and formulates the results as follows : The mortality was large, *i.e.*, 18·5 per cent. In two cases the results are unknown, one showed no improvement, one slight, two moderate, while fourteen showed marked improvement ; in fact, the patients showing marked improvement may be considered cured, as their arms were almost as useful as before the injury. Of the five deaths, two were due to pyæmia, probably caused by lack of antiseptic precautions ; one was the result of secondary hæmorrhage; the fourth was due to hæmorrhage and exhaustion ; the fifth to gangrene following ligature of the axillary artery. Three of the deaths would be very unlikely to occur at the present day in the hands of competent surgeons, while two were the result of accident during the operation, which might happen to any one, so that, in the light of our present knowledge, the percentage of mortality is very much reduced—say, to about 7 per cent.—and, in the face of the good results obtained and great relief to the patients, this operation is rendered not only allowable, but, in Gwyer's opinion, justifiable.

Reduction of Dislocations of the Femur on the Dorsum Ilii.—Stimson[4] recommends the following plan: The patient is placed lying on his abdomen, in such a way that the right half of the pelvis projects over the edge of the bed, the lower limb thus hanging freely. The thigh hangs vertically, the leg being flexed at a right angle and supported at the ankle. After a few minutes of this suspension, the muscles become completely relaxed, and a smart blow in the popliteal region, delivered in a vertical direction downwards, causes the head of the femur to return into the cotyloid cavity with a characteristic snap.

REFERENCES.—[1] "Ann. of Surg.," Feb., 1891; [2] "Med. Chron.," April, 1891; [3] "New York Med. Jour.," March 28, 1891; [4] "London Med. Recorder," Dec. 20, 1890.

DIURETICS.

Synopsis.—(Vol. 1891, p. 148.) **Digitalis** superior to digitaline; **Strophanthus** equal to digitalis; Sparteine, Adonis and Convallaria are of secondary value; **Caffeine** hypodermically. ℞. Caffeine Pur, Sod. Benzoat. āā ʒss, Boiled Water ʒjss, M. A syringeful injected two or three times a day. **Theobromine, Salicylate of Theobromine**, gr. 90 daily; **Kola Nut** infusion, tincture or extract; **Lactose**; **Glucose** 100 grammes of the syrup; **Buttermilk**; **Calomel**.

Apocynum Cannabinum Tincture ♏ 10 (p. 10); **Armeria Vulgaris** infusion 10 parts to 200 in catarrhal affections of kidneys and urinary concretions (p. 12); **Diuretin**, 6 grammes daily in gramme doses in cases of renal and cardiac disease (p. 26); **Lactose** ʒ3—4½ daily (p. 36); **Rubus Chamæmorus Decoction**, 5 or 6 teaspoonfuls daily in nephritis, hepatic cirrhosis, cardiac affections, chloro-anæmia with œdema, etc. (p. 50).

DUPUYTREN'S CONTRACTION. *F. S. Eve, F.R.C.S.*

In some interesting lectures on contractions of the fingers and toes Mr. Wm. Anderson[1] summarizes the following main conclusions regarding the above-named deformity: (1,) There are two forms of disease comprised under the name "contraction of the palmar fascia," the one traumatic in origin, dependent upon common inflammatory changes in the integumental and fascial structures, and occurring at all ages; the other unassociated with obvious traumatism, tending to multiplicity of lesion, and almost confined to middle and advanced life; (2,) The latter condition, true "Dupuytren's contraction," is not, strictly speaking, a contraction of the palmar fascia, but consists of a chronic inflammatory hyperplasia commencing in the subcutaneous connective tissue and involving secondarily the palmar fasciæ and the deep fibres of the corium. The morbid bands are for the most part formed at the expense of the normal tissues; (3,) It does not appear to be connected primarily with pressure or friction of the palm by tools or other objects employed in manual occupations, but is probably

caused by a specific infective agent, which effects its entrance through epidermic lesions made by the finger-nails or otherwise; (4,) It is almost essentially a disease of middle and advanced age, more common in men than in women, occurring in all classes, tending to progress slowly through a long course of years, and to return after operation; (5,) It is connected with a special diathesis, inherited or acquired, which cannot yet be expressed in any known terms; but neither gout, rheumatism, rheumatoid arthritis, nor any other of the ordinary constitutional ailments has been shown to have any causative relation to the disease; (6,) It appears to be almost, if not quite, unknown in certain parts of the East, as in India and Japan.

Of the various operative procedures he believes that the best operation in all advanced cases is the subcutaneous plan of Mr. Adams. It is speedy and safe, the immediate results are very satisfactory, the risks of relapse probably less than in the open method, and in the event of a recurrence other lines of treatment still remain open. The operation of excision involves a more extensive surgical injury, but under antiseptic precautions will usually do well. There is, however, a greater risk of casualties. It is perhaps most applicable to the slighter cases, in which the whole of the disease can be removed, but may also be employed where the subcutaneous plan has failed. Plastic operations are most useful in the traumatic forms, and in those cases of true Dupuytren's contraction where the skin is so far involved that full or satisfactory extension is impossible. In two cases of contraction at the metacarpo-phalangeal joint, in which the skin was greatly involved, he made a transverse incision through the integument and fibrous cord at the root of the finger, and filled up the wide gap left on extending the joint by the transplantation of a flap from the side of the digit. The result was good and permanent in one case of traumatic origin; in the other, a true Dupuytren's contraction, the union and healing went on with ideal perfection, but the operation failed in consequence of the supervention of a gouty inflammation of the parts, in the third week, after all the difficulties appeared to have been surmounted. The dissection of the flap must be carefully conducted in order to avoid injury to the digital nerves.

REFERENCE.—"Lancet," July 11, 1891.

DYSENTERY.

Frank J. Wethered, M.D.

Dr. A. W. Leahy[1] advises the use of **Sulphate of Magnesia** as a remedy in cases of acute dysentery, and has been much pleased with the successful results which have attended its use.

After observing a number of cases in which these unfavourable results were accentuated, Dr. Leahy writes that he commenced treat-

ing cases of acute dysentery with a saturated solution of Epsom salts. His attention was first called to the value of this drug in dysentery by Dr. Anderson, who called his attention to the statement of Bartholow that "the most efficient treatment of acute dysentery is by the administration of sulphate of magnesium. It is especially adapted to the acute stage, where there are fever, pain, tenesmus, and stools of mucus and blood. It lessens the hyperæmia and causes fæcal evacuations, with the result of relieving the pain and the distressing straining."

Dr. Leahy publishes a table of ninety-five cases treated at Hyderabad, all of them apparently being marked cases of dysentery. All the cases occurred among the poorer class of patients who seek relief at hospitals, and the vitality of many of them was at an exceedingly low ebb when they came under treatment. Out of the ninety-five, three died; two out of these three cases were stated to have been, at the time of their admission into the hospital, in a moribund condition.

His method of administration is to take a sufficient quantity of sulphate of magnesium to saturate 7 fluid ounces of water, and to this saturated solution add 1 ounce of diluted sulphuric acid. The dose of this is a tablespoonful every hour or two in a wineglassful of water until it operates. Sulphate of morphine may be combined with it, or starch enemata with laudanum may be employed.

Dr. Leahy has ordinarily given 1 drachm of this saturated solution with 10 drops of dilute sulphuric acid every hour or two until its effects became evidenced in the fæculent character of the stools and their freedom from blood and mucus, or until the temperature has fallen, and the pain and tenesmus have ceased. When the stools have become normal in colour and appearance, and the patient only passes two or three in the twenty-four hours, an ordinary astringent mixture of acid with laudanum or tincture of Indian hemp, or a pill containing extract of opium, is usually all that is necessary to complete the cure. It is, of course, imperative to diet the case with great care.

Dr. Leahy sums up the results of this treatment, as compared with that of ipecacuanha, as follows: (1,) It has no depressing action on the system; (2,) It neither produces nausea nor vomiting; (3,) It quiets and soothes the patient; (4.) Its physiological action on the mucous membrane of the intestines in relieving hyperæmia is sound, and by this means it probably prevents the formation of ulcers within the gut, places those which have already formed into a condition most favourable for their healing, preventing the acute inflammatory process and engorgement of the mucous membrane leading to the death of more tissue, and thus bringing about a cure.

REFERENCE.—"Lancet," Oct. 4, 1890.

Synopsis.—(Vol. 1890, p. 234.) Injection of ½% emulsion of **Creoline** by long rectal tube, allowing it to remain as long as possible, and repeating it twice or thrice daily; should catarrh remain after arrest of the dysentery, injections of **Lead Acetate** and **Tannic Acid** with **Cinchona** and **Sulphate of Soda** may be required. ℞ Liq. Hydrarg. Perchlor. ʒss, Tinct. Cannab. Indic. ♏x, Mucil. Tragacanth ʒj. Sig. to be taken from four to eight times daily, according to urgency of symptoms.

(Vol. 1891, p. 150). **Alum** ʒss, Aq. Css, as enema twice daily in severe chronic form. ℞ Cup. Sulph. gr. x, Tinc. Opii ʒj, Aq. ʒiv as enema to check profuse bleeding. ℞. Mag. Sulph. saturated solution, Ac. Sulph. Dil. gtt.x, M. Hourly in acute forms. **Newbouldia Lævis** decoction ʒi–2, or fluid extract ♏ 15–60 (p. 42).

DYSHIDROSIS POMPHOLYX, or CHEIRO-POMPHOLYX.

Synopsis.—(Vol. 1890, p. 235.) **Tonics**, with **Change of Air** and **Open-air Exercise**, avoiding soap, **Bathing with Gruel**, and applying as dusting powder, ℞ Salicylic Acid 3·0, Talc 87·0, Oleate of Zinc 10·0.

DYSMENORRHŒA. *R. Milne Murray, M.A., M.B., F.R.C.P.E.*

Dr. F. H. Champneys[1], in the Harveian Lectures on "Painful Menstruation," discusses the causes and treatment of this condition. After stating the various modern views of the process of menstruation he discusses the usually received classification of the varieties of dysmenorrhœa. He excludes the chlorotic, gouty and rheumatic, ovarian, tubal and fibroid, as being in any terms proper classes, and limits these to two, viz.: (1,) Congestive, and (2,) Spasmodic, and under one or other of these all other so-called varieties may be arranged.

(1,) *Congestive and Inflammatory Dysmenorrhœa.*—This name is strictly a misnomer, for the pain in a majority of cases principally occupies the inter-menstrual period, and is relieved by the flow. Indeed, it often happens that the actual time of the flow, where this is at least moderate, is the most comfortable time experienced by the patient. The pathology of the affection depends rarely on the presence of acute inflammation, frequently on the sequelæ of past inflammation.

The symptoms are aching and a feeling of swelling in the pelvis, including the rectum and the bladder, and referred to the lower abdomen and the sacrum. In cases where the ovary and appendages are affected there is pain in the groin, darting down the inner aspect of the thigh. There is pain in defæcation, micturition, and coition. The pain usually begins just after the monthly flow is over, and reaches its climax just before the flow. If this is free the pain quickly subsides. The main part of the pain is inter-menstrual and not menstrual. This variety is rare in virgins, usually following pregnancy, but may follow long-standing dysmenorrhœa.

TREATMENT.—The treatment of acute inflammatory dysmenorrhœa is the treatment of acute pelvic inflammation ; after this we have to deal with a condition of tenderness and impeded return of blood. For the former we use **Fomentations, Counter-irritations, Potassium Iodide,** and **Mercury** ; for the latter, saline laxatives are the most effective. Special stress is laid on **Free Purgation,** with a view to deplete the gorged pelvic vessels.

Membranous Dysmenorrhœa.—The author deals next with membranous dysmenorrhœa, which, however, he regards as a variety of the spasmodic type. In this form more or less perfect casts of the altered uterine mucosa are thrown off during the menstrual flow. Usually the attack begins in a typical case by the patient being seized by severe intermittent colicy pains in the hypogastrium, sacrum, thighs, etc. The flow begins but the pain continues. In twenty-four or thirty-six hours the flow stops and the pain increases. Soon thereafter a filmy body is expelled, having the shape and size of the uterine cavity ; its outer surface is shaggy, the inner surface smooth. Thereafter the pain generally ceases, and the flow continues to the end of the period. As regards the causation of the pain, this may partly be due to the obstruction caused by the membrane, but is most likely increased by the passage of the membrane over a highly sensitive area inside the os internum.

TREATMENT.—The affection is generally declared incurable, and usually treatment is anything but successful. It may be directed first towards the relief of pain, second, to the morbid condition of the mucosa. The first may be effected, in some cases, by **Dilatation,** by the use of drugs, such as **Guaiacum, Sulphur, Antipyrin,** and **Castoreum.** With regard to local measures, temporary relief has followed scraping of the uterus shortly before a menstrual period. This should be done repeatedly with an irrigating curette, preceded by dilatation.

(2,) *Spasmodic Dysmenorrhœa.*—This division, which includes the great majority of severe cases, is the only one which is justly entitled to the name dysmenorrhœa. The pain is spasmodic or colicy in character, comes on punctually, and typically intermits. It precedes the flow by a few hours or a day or two, and lasts twenty-four to forty-eight hours after the flow has appeared. It is usually referred to the hypogastrium, and varies greatly in intensity. The flow is at first scanty, later, more profuse. The blood is often mixed with clots which contain shreds of mucosa. The condition is not relieved by time, and is increased by marriage. The patients are usually sterile, but if pregnancy ensues the patient is usually permanently cured.

As regards causation, the author discusses the various mechanical theories relating to flexion of the uterus, stenosis and congestion which have been advanced to account for this condition, all of which he sets aside. He holds that spasmodic dysmenorrhœa is an affection of the immature uterus ; it is essentially a neurosis, and has motor phenomena (colic) and vaso-motor phenomena (scanty or greatly varying flow). The pain is certainly colic, it often precedes the flow, and sometimes occurs without any flow.

TREATMENT.—The general mode of life must be regulated, healthy exercise must be enjoined, the bowels regulated by saline laxatives, and the diet should be simple and wholesome. During the pain the patient is better at rest. Pessaries are practically useless. As regards drugs, **Guaiacum, Sulphur**, and **Castoreum** may be useful. The last should be given three or four times a day in the form of 20 drops of the tincture, with or without a few drops of tincture of **Nux-vomica.** "A hot foot-bath and a good glass of hot gin-and-water at bedtime at the beginning of the pain is an old and valuable remedy. It probably acts by relaxing the vaso-motor and muscular spasm. The gin should be given once a month only." Dilatation is the last resort. It is generally contra-indicated in the presence of inflammatory signs in the pelvis, even if old.

The position of the author of these papers and the auspices under which they were given are sufficient ground for the foregoing notice in this record of the year's literature. Very few gynæcologists will admit, however, that the mode of dealing with the subject is satisfactory, or that the opinions expressed are above criticism. It does not appear, for example, that the author is clear whether dysmenorrhœa is a symptom or a disease *per se*. As regards the first group it would seem to be a symptom only of certain "congestive" disturbances of the pelvic viscera ; while in the second (spasmodic) it would seem to be elevated into a special disease. Even the author cannot hide from himself the illogical nature of the classification, for he naively admits that to call the phenomena of the first, dysmenorrhœa, is a misnomer, seeing that the pain usually occurs during the interval and is least during the flow !

Space does not permit discussion of the questions of pathology, etc., raised in these lectures, but it may be permitted to say a word in reference to the treatment discussed. In the first place, the general impression left by the author's account of the treatment he recommends is decidedly depressing, and one takes away the idea that the prognosis of dysmenorrhœa must be grave enough indeed.

But there is one matter which deserves more than passing attention.

When one reads at this time in the century that a gynæcologist of position recommends that a girl suffering from spasmodic dysmenorrhœa should have "a good glass of hot gin-and-water at bedtime" one certainly rubs one's eyes! Dr. Champneys recommends it as a "good old-fashioned remedy," and explains its action by suggesting that it reduces vaso-motor and muscular spasm. May one venture to suggest another explanation of its undoubted action? Is it not likely that its action consists in impairing the activity of the sensorium by inducing the condition more generally known as intoxication? Bear in mind, the subject is usually a nervous hysterical girl, who for most of the day on which the gin has been administered has been in a state of more or less marked nausea, taking little food and vomiting all she takes. Worn out with pain and starvation, she drinks a glass of hot gin-and-water, and in a few minutes falls into a lethargic sleep, which in other conditions might be called a drunken dose. Dr. Champneys recommends that the gin be given once a month only. But who will secure this? Is it not the experience of a multitude of practitioners that the majority of cases of female alcoholics in the upper ranks of life are women who in early years have suffered from dysmenorrhœa and whose mothers have adopted the "good old-fashioned remedy" so highly recommended by Dr. Champneys? He will be a more than ordinarily acute physician and she a more than usually watchful mother who will succeed in limiting the prescription to the monthly dose. It is as certain as may be that some time or other the menstrual sufferer who once experiences the anodyne effect of the hot gin-and-water will not fail to resort to it whenever any pain or discomfort arises which seems likely to yield to the influence of the remedy. Women drunkards are not, like the majority of men drunkards, led astray by the temptations associated with the social use of intoxicants. They begin by using it as a medicine to relieve pelvic distress, and they end in too many cases in a way which it is frightful to contemplate. The use of alcohol as a means of relieving dysmenorrhœa should surely be the very last resort. Its use as a routine should raise the strongest and most emphatic of protests.

REFERENCE.—"Lancet," Dec. 1, 1891, *et seq.*

Synopsis.—(Vol. 1890, p. 236.) When sudden and accompanied by pyrexia, **Tinc. Aconiti**, ♏j hourly; **Liq. Ammonii Acet.**, ℥ss in four hours; **Tinc. Pulsatilla**, ♏v in four hours; **Mustard Baths** and the **Hot Pack**; **Opium** or **Chloral** alone or combined may be necessary. *In Ovarian Dysmenorrhœa*, with scanty flow and delayed functional development, **Iodide of Potassium** in increasing doses; **Nux Vomica, Quinine** and **Iron**; **Intra-uterine Faradisation** is useful when flow is sufficient or profuse; **Bromides, Ext. Hydrastis, Canad. Liq.**, ♏xv to xx; **Ext. Salic. Nig. Liq.**, ♏xv

to xx; Tinc. Cannab. Indic., ♏v hourly for seven or eight doses; and Hot Injections are useful; Belladonna Suppositories (gr. ¼ to ij of Extract) may relieve pain; Belladonna and Cannabis Indica Suppositories, containing ¼ gr. of each Extract, and used every night or night and morning. *In Uterine Dysmenorrhœa*, Ext. Viburn Prunifol. Liq., ʒss every four hours; Ext. Ergot Liq., ♏v to x; Tinc. Actææ Racemosæ, ♏x to xx (when there is rheumatic history); Potassii Iodidi, gr. v to xv; Liq. Strychniæ, ♏iij to v; Tinc. Caulophylli, ♏v to xx; Antipyrin, gr. iij to v (in menstrual colic). *Dilatation of Cervix:* by graduated sounds or forcible dilators under anæsthesia. *Division of Cervix:* Galvanism.

(Vol. 1891.) Anemonin gr. ⅛ in red wine (p. 8); Cannabis Indica Tincture ♏10 in simple spasmodic form (p. 18); Hydrastis Liq. Extract, gtt. 25, twice daily in congestive dysmenorrhœa (p. 32). Pulsatilla, alcoholic extract, gtt. 40 daily (p. 47).

DYSPEPSIA.

Frank J. Wethered, M.D.

The pathology and treatment of digestive disorders have of late been attracting the attention of many observers, especially in France. Dr. Covtaret[1], in speaking of the forms of dyspepsia, divides them into two classes as regards treatment: Those which require alterative, and those which require acid, medication. Very few cases obtain relief from alkalies. Still, there is a class of cases which will be cured by such treatment. Imperfect mastication, privation, over-work, mental anxiety, or an excess of some sort, may have been followed by flatulence, vomiting, etc., and the patient seeks advice. Here the production of acid is diminished, but the glands themselves may be healthy; and in eight cases out of ten they only require the stimulus of an alkali to make them secrete their acid in the proper quantity. In these temporary conditions alkalies are the true remedy.

There is another class of cases in which the patients are victims of the "rheumatoid diathesis." These require acid treatment. Symptoms are as follows: Uniform whiteness of the tongue, anorexia, wasting, and loss of strength; digestive troubles, with or without vomiting; alternate constipation and diarrhœa; wandering pains, rendered worse by changes of temperature; frequent coryza, pruritus, and skin-eruptions; no true rheumatic antecedents. To such cases strong mineral acids are a necessity. Others to whom it is almost equally useful are the patients with dilated atonic stomachs, which allow of fermentative changes; neurotic and anæmic girls; old men with enfeebled gastric powers; the anæmic dwellers in tropical climates. Such cases often improve remarkably under acid treatment.

As regards the acid to be employed, hydrochloric acid being the natural acid of the stomach, it was thought that this would be the best to use. In practice, however, it has been found that its powers fall far

short of what might be expected. Small doses are useless, and larger doses are both inconvenient and irritating. Bouchard gave as much as ʒj of strong acid daily to his patients, diluted in a quart of water, and this was often the minimum efficient quantity *per meal.* Others tried vegetable acids,—lactic, tartaric, acetic. All these, as might be expected, did nothing but harm. **Aqua Regia** is much employed in France, and enormous doses are often taken with benefit. Some patients, however, cannot stand this, and the author prefers a compound acid prepared in the following way :—

℞ Acid Sulphuric (pure)	28 pts	Spt. Vini (80°)	180 pts
Acid Nitric (pure)	8 pts		

Misce.—By weight, gradually, in ice.

This is his "*Acide sulphonitrique rabelisé.*" It should be prepared long before required for use, in fact the older the better. No violent reaction should be allowed to occur during its preparation, and the product when ready for use will contain sulphovinic acid, and a small quantity of nitric ether, which gives it a most pleasant odour. The dose is about 20 drops, after meals, given in water, wine, or beer. According to the author, no acid gives better results than this, which agrees well whenever acids are indicated.

At the meeting of the Académie de Médecine, held July 29, 1890, Professor Germain Sée reported an elaborate work as to the value and uses of **Cannabis Indica** in the treatment of neuroses and gastric dyspepsia.

After a series of careful experiments, Professor Sée[2] arrived at the following conclusions :—

(1,) Cannabis indica should be employed in the form of a fatty extract, in the dose of ¾ of a grain, in three doses daily, in the form of a solution ; more than this amount acquires toxic properties, the result being evident by ordinary symptoms of intoxication. The chemical principles which may be extracted from cannabis indica, such as tannate of cannabin and cannabinon, have not succeeded in the author's hands in giving precise or favourable results, without doubt because they are not the true active principles.

(2,) It is especially in the non-organic affections of the stomach that cannabis is indicated, and these diseases comprise two groups. The first includes the alterations of the gastric juice, among which hyperacidity, due to the excess of hydrochloric acid, is most frequent ; while the second group comprises exclusively cases of gastro-intestinal neuroses, without showing any modification of the gastric juice.

(3,) Of the dyspeptic or neurotic symptoms, all dyspepsias may be reduced to five different classes, characterized by loss of appetite,

flatulence, alteration in the digestive power, participation of the intestine, and reflex nervous troubles, either of cardiac or cerebral character. The author shows that cannabis indica possesses great constancy in its power to arrest painful sensations and restore the appetite, no matter what may be the diseases in which these conditions are produced. If, however, they depend upon an excess of hydrochloric acid, the administration of cannabis indica should then be associated with large doses of sodium bicarbonate, administered towards the end of gastric digestion.

The author shows, however, that cannabis indica has no action on the gastric contractions or dilatations, although it certainly and distinctly reduces distress, which accompanies these conditions, and which are generally designated under the name of pyrosis; further, gastric digestion is facilitated by cannabis indica, when it is retarded or prevented by loss of nerve power or the excessive pain produced by hyperacidity. Cannabis indica, as proved by Professor Sée, however, seems to be without any power in producing relief in the various dyspeptic troubles attributable to the amount of acid present.

Finally, this drug seems to relieve the reflex nervous troubles associated with dyspepsia; but has no effect on the nervous dispositions resulting from this cause, such as hypochondriasis, hysteria, or neurasthenia.

In conclusion, Sée maintains that cannabis indica is a true sedative to the stomach, and without any of the inconveniences of the narcotics.

The writer has tried tincture of cannabis indica in a large number of cases of dyspepsia, and has found it give considerable relief when other remedies have failed; but his results are not so favourable as those recorded by Professor Sée.

Dr. Cséri[3] advises a mechanical plan of treatment in chronic dyspepsia, and states that he has had very favourable results from it.

The plan consists mainly in suitable dieting, and in a peculiar kind of massage. The author practises the latter when the stomach is full, about two or three hours after dinner. Changing frequently his mode of proceeding, he strokes and kneads the stomach from the fundus towards the pylorus, first gently and superficially, then more energetically, for ten or fifteen minutes, the patient lying on his back with his legs drawn up and breathing with his mouth open. During the last few minutes the massage is extended to the bowels. The manipulation is neither painful nor disagreeable, but is very well borne. The patients experience after the massage a feeling of warmth and comfort; occasionally they feel sleepy, but the fulness and feeling of weight have generally disappeared.

REFERENCES.—[1] "Bull. Gén. de Thérap.," June 20, 1891. [2] "Therapeutic Gaz.," Oct. 15, 1890. [3] "Wiener med. Woch.," and "Therapeutic Gaz.," Nov. 15, 1890.

Synopsis.—(Vol. 1890, p. 238.) **Gastric Lavage** with water, to which a few drops of 20% alcoholic solution of **Thymol** may be added (useful in habitual vomiting after weaning, atony of intestine, as in rickets, and in chronic dyspepsia); **Bismuth Lozenges** in acid dyspepsia. ℞ Pure Creasote gtt. 10, Bicarb. of Sodium gr. 120, Powdered Gum Arabic q.s., Water ℥v, M. A tablespoonful one hour after each meal. ℞ Pepsini gr. 60, Creasote, gtt. 10, Carb. of Bismuth gr. 60, M. Divide into thirty portions, giving one in a gelatine capsule. When acid eructations and pain are present, **Papain**, 10 or 15 centigrammes, mixed with **Sugar of Milk**, 25 to 30 centigrammes are given in a mixture containing **Bicarbonate of Sodium, Carbonate of Ammonium, Carbolic Acid**, and **Glycerine**, an hour or two after food; **Glycerine** in drachm doses is useful in dyspepsia, and in summer diarrhœa of children.

EAR (Diseases of).

J. Dundas Grant, M.D., F.R.C.S.

I.—EXTERNAL EAR.

Furuncles in the External Meatus.—Szenes[8] recommends the use of **Menthol** in 20 per cent. solution in **Olive Oil**. It is applied on a strand of cotton-wool, and changed once in twenty-four hours. Gruber[9] advises the introduction of small **Gelatine Cones** medicated with **Opium** or **Morphia**. [The editor has found these of value, but difficult to introduce when the swelling in the meatus is at all extensive, on account of their extreme softness of consistency.]

Polypoid New Growths in the Meatus.—Steinbrügge[10] points out that of the various forms of so-called polypi in the ear, myxoma, fibroma, granuloma, and angeio-fibroma, almost the only one found growing from the walls of the meatus is the granuloma, or granulation tissue growth. [This exactly corresponds with our own experience. We would add that granulations in the meatus grow almost invariably from the posterior wall, and usually in connection with a spot of caries or a fistula leading into the mastoid process, as can be ascertained by means of a sharply bent probe introduced just beyond the growth.—Ed.]

"*Hearing-restorers.*"—In these days of "bold advertisement" of artificial ear-drums and "hearing-restorers," it is interesting to note the observations of Dr. Laurence Turnbull[11] on the subject. He says that most of them act most injuriously upon the sensitive ear, and are of no benefit except to those having a hole or perforation or relaxation of the ossicles. In many instances they act as a foreign body, and when they have, as is usual, a metal stem are sure to set up a "running ear."

II.—Middle Ear.

Treatment for Foreign Bodies in the Tympanum.—We have in previous issues of this "Annual" dwelt upon the necessity for the greatest caution in adopting measures for the extraction of foreign bodies from the ear. Among other points we may recall: (1,) The necessity for careful verification of its presence and nature under good illumination, and the *indispensability of an anæsthetic in all troublesome cases*; (2,) The propriety of trusting to the syringe, and of giving it a prolonged trial; (3,) The excellence of "masterly inactivity" if the foreign body is of such a nature as not to swell up or putrefy, and of using means for the reduction of inflammation; (4,) The propriety, in the opposite condition, of taking further immediate steps, such as the employment of a fine, blunt-pointed "hoe," or, with still greater caution, a diminutive sharp hook, or, with greater safety but less probability of success, a loop of silver wire. A highly ingenious extractor has been devised by Dr. Ward Cousins[6], having two delicate metal loops, which are pushed over the foreign body and then pressed together by means of a sliding tube so as to grasp it for removal.

If these means fail, the question of more extensive operative interference comes in. It has been discussed by Zaufal[7]. He considers it necessary to operate at once in case of marked dulness of hearing or complete deafness owing to destruction of the stapes by the foreign body or the instruments used for its extraction, or if its size or shape is such that extraction through the natural passages is impossible. If it be determined to wait in hope of the conditions becoming more favourable for extraction, he insists on daily observation of the temperature, *and of the ophthalmoscopic appearance of the fundus oculi*. He would operate at once in case of neuro-retinitis or tumefaction of the optic papilla at the commencement of the case, or of increasing hyperæmia of a fundus primarily normal (other causes than the irritation by the foreign body being excluded), or of progressive venous hyperæmia of the fundus, with simultaneous rise of temperature.

He employs three modes of operation: (1,) Detachment of the auricle; (2,) Detachment of the auricle with removal of the membranous lining of the posterior wall of the osseous meatus; (3,) Chiselling away of the posterior wall of the osseous meatus, with eventual laying open of the mastoid antrum and removal, if necessary, of the epitympanic portions of the roof and osseous meatus.

III.—Non-Suppurative Otitis.

By far the largest number of cases are secondary to ordinary catarrhal conditions, brought about especially by disorders of the

naso-pharyngeal cavities, such in particular as prevent the free passage of air into and through the Eustachian tubes. The negative pressure then produced in the tympanum leads to indrawing of membranes, vascular congestion, alteration of secretion, and the formation of synechiæ. There can be no doubt, however, that in certain cases the existence of a previous inflammatory condition cannot be made out, and we are almost irresistibly driven to the conclusion that a primary idiopathic sclerosis is a disease in itself. It appears to be determined by hereditary predisposition or some personal dyscrasia.

Gradenigo[12] holds that the great majority of cases result from extension into the tympanic cavity through the Eustachian tube of morbid processes which have their seat in the naso-pharynx, and he professes to have benefited by naso-pharyngeal medication patients who had been unsuccessfully subjected to a long continued course of direct treatment for the ears. He distinguishes three forms: Those in which the phenomena attributable to changes in the tympanum and Eustachian tube predominate; those in which the region of the stapedio-vestibular articulation is particularly affected; those in which lesions of the internal ear predominate.

[This grouping agrees very much with what we stated last year in the general rules for prognosis in cases of dry middle ear catarrh.]

In relation to treatment, the moral to be derived from this paper is the preponderating necessity for the most diligent attention to the nose and naso-pharynx, of which much has already been said in the "Annual" from year to year. At the same time Politzerisation and the Eustachian catheter in cases of obstructed tympanic ventilation, and Eustachian bougies in recognized stricture of the tubes have their appropriate position. Great benefit in cases of stiffness of the joints between the ossicles often follows the use of such gymnastics or massage as may be practised by means of the pneumatic speculum, Delstanche's modification of it, or Ward Cousin's inflator and evacuator, the stiffness being recognized by means of the pneumatic speculum, of which more constant routine use should be made. That all these are often quite unavailing unless thorough naso-pharyngeal treatment is carried out cannot be too strongly impressed on the mind. A method introduced by the editor (D. G.) has produced unexpectedly brilliant results in cases which seemed hopelessly unpromising and quite intractable under other methods of treatment, viz., the use of the **Eustachian Self-inflator** ("Lancet," Jan. 3, 1892). This consists of an india-rubber tube about fourteen inches long (*Fig. 9*, p. 206), at one end of which is a glass mouth-piece with a bulb containing cotton wool, and at the other a glass tube with an india-rubber

teat fitting the nostril. A few (say 5) minims of the following, or an equivalent combination of chloroform are dropped on to the cotton wool in the bulb of the mouthpiece :—

℞	Chloroform			Spir. Vin. Rectif.	ad ℥j
	Æther Acetic	āā ℥ij		Mix.	

The patient blows through the tube once or twice while holding the nosepiece near the nose till the pungency diminishes. Then with the mouthpiece firmly held between the lips, and the nosepiece plugged into one nostril while the other is closed, he blows (having drawn a full breath if necessary) while puffing out the cheeks so that the expired air impregnated with the medicaments passes up the Eustachian tubes and the tympana are inflated. The patient is directed to employ the least force necessary for the purpose of making the air go "to the ears," and the amount of force required is often extremely small. The force of the blast may be directed chiefly or almost exclusively to one ear by plugging up the opposite ear with a finger, and leaning the head to the opposite shoulder, so that the ear requiring inflation is uppermost. The admixture with chloroform greatly facilitates the passage of the air through the Eustachian tube, and the pressure can be kept within much lower limits than is possible with Politzer's method of inflation. The good effects observed where "Politzerisation" was inefficient are to be ascribed in great measure to the *minimal pressure* employed. When it is desirable for the patient to have frequently repeated inflations continued over a stated period the advantage of the method is obvious.

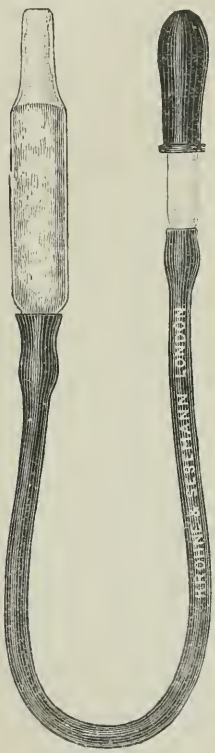


Fig. 9.

Cholewa sometimes performs *tenotomy of the tensor tympani* (*vide* last year's issue).

Bronner[13] claims good results from the inflation through the Eustachian catheter of the vapour from a 20 per cent. oily solution of **Menthol** in a capsule attached to the catheter.

Sexton[14] has in a number of cases of chronic catarrh, where all other

treatment was unavailing, produced improvement in the hearing and relief from the intolerable tinnitus by *excision of the tympanic membrane and removal of the malleus* with sometimes the incus. He uses general anæsthesia and antiseptic precautions. Reproduction of the membrane took place in most cases after some time, but when again removed it ceased to regrow, or only did so in an imperfect way.

Mobilization of the Stapes as practised by Miot was fully described in last year's "Annual." Its scope is probably limited to cases of cicatricial adhesions following suppurative processes.

Avulsion of the Stapes occurred accidentally in the practice of Botey,[15] of Barcelona, with relief from previous tinnitus and improvement of hearing. He then performed the operation experimentally on fowls, and found that the birds heard well, but at a less distance than before. He calculates that without ossicles we should hear medium voice at a distance of one mètre. The deduction follows that in cases where hearing power is below this the operation might be beneficial.

IV.—Suppurative Otitis.

Otorrhœa: Suppurative Inflammation of the External or Middle Ear.—Dr. Walker[16] in recent cases avoids carbolic acid, which he finds the most irritating application (as we have done, even when extremely dilute), and prefers **Resorcin** (*vide* "Cocain-Resorcin" treatment in "Med. Ann.," 1891).

In *Chronic Cases of Otorrhœa without Perforation* he uses "dry treatment," thus: (1,) Drying out the passage and insufflation with **Iodoform**; (2,) Next day and onwards insufflation with the following powder:—

℞ Cret. Gallic ʒiij | Ac. Boric. ʒj

If this does not succeed at the end of a week, **Creoline** dusting powder.

In Perforative Cases he states categorically that "they cannot be treated on the dry plan." [Here he will find many dissentients, but we agree with him in the main, and very rarely use the dry treatment.] He syringes into the ear every morning, after cleansing, a little of the following, or an equivalent lotion:—

℞ Resorcin ʒss | Ext. O_1 ii ʒj
Zinci Chlor. gr. j | Aq. ad ʒiss

In *Simple Inflammation of the Meatus in Children* his treatment is: A **Calomel** purge; application of equal parts of **Belladonna** and **Chloroform** liniment to the mastoid; if the discharge becomes mucous (? purulent), daily painting of the meatus with **Tannate of Glycerine** after drying out.

In exanthematous inflammation after any of the zymotic diseases, the following are his recommendations: First syringe out the ear with warm water, dry it thoroughly with cotton wool, then syringe with this lotion:—

℞					
	Ferri Alum.	ʒiij	Aq. ad		ʒiij
	Zinc Sulph.	ʒij		Mix.	

In these cases he finds the great object is to see that the Eustachian tube is thoroughly open, and for this purpose he uses Politzer's bag or the catheter, if necessary, once a week.

Syphilitic and *Tubercular* otorrhœas he treats on the same principle, with the addition of strict hygienic and constitutional treatment.

[So far as it goes, this routine method of treatment is likely to be unobjectionable in a large number of cases, but we fear we cannot advise our readers to suppose that we can thus put the treatment of otorrhœa "in a nutshell."]

Dr. Gradle[17] gives the following as the treatment for *Chronic Suppuration of the Middle Ear:* When there is a large perforation in the lower part of the membrane, cleansing by means of a syringe through the meatus; when the perforation is small, syringing through the Eustachian tube by means of a catheter; when there is suppuration in both ears, irrigation by means of the nasal douche used as in Politzer's method of inflation; when the opening is in Shrapnell's membrane or the suppuration is in the "attic" of the tympanum, a fine catheter is to be passed through the opening. (See also "Med. Ann." for 1891.) If fœtor continues in spite of this cleansing, he considers that there is caries with inaccessible pus-containing clefts, or else suppuration in the mastoid spaces. To purify the fresh-formed pus he insufflates **Boric Acid** with ⅛ of its weight of **Salicylic Acid.** Polypi, if small, he leaves, but if obstructing he removes. Granulations from carious spots have to be curretted away, and any loose spicules have to be removed with forceps or the daily instillation of a 5 per cent. solution of **Hydrochloric Acid.** Carious ossicles should be removed, and naso-pharyngeal disease thoroughly treated. Instruments for cleansing and applying medicated fluids and powders to the middle ear have been described by Dr. Joseph Andrews,[18] of New York.

New Remedies.—**Styrone** has been recommended by Cheltsoff.[19] Two to four teaspoonfuls of a solution of 1 drachm in 4 ounces of spirit are mixed with a tumblerful of warm water, and with this the ear is syringed twice or thrice daily. It is disinfectant, deodorant, and analgesic.

Aristol has failed in Bürkner's[20] practice to give the same results

as claimed by Rohrer. He finds it apt to form concretions, and in the best of cases no better than boric acid. In treating granulations he found it useful, and in diffuse external otitis very satisfactory. He used it as a powder or an ointment, or mixed with glycerine.

Pyoktanin has been tried by Patrzek,[21] but he finds it of little use in otorrhœa, and very inconvenient from the unavoidable staining of the hands and clothes.

Camphorated Salol.—Cuvillier[22] cleanses the meatus with a boric lotion, then introduces a wool tampon saturated with camphorated salol, and applies an external antiseptic dressing. This should be changed within twenty-four hours at latest.

V.—The Dangerous Complications of Chronic Suppurative Otitis.

Dr. Newton Pitt[4] has given a most valuable analysis of fifty-seven cases of ear disease with complications, which led to death, during a period in which about nine thousand *post-mortem* examinations in all were made. Death was therefore traceable to ear-disease in 0·66 per cent. of the cases.

Cerebral Abscess occurred in eighteen cases—all of chronic otorrhœa—confirming the general experience that otorrhœa does not set up cerebral abscess till it has lasted for months or years. Three of the abscesses were in the cerebellum, one in the pons, two in the centrum ovale, and twelve (two-thirds) in the temporo-sphenoidal lobes near the roof of the tympanum. Dr. Pitt formulates the objects to be aimed at in the treatment of these cases as: (1,) To improve the drainage of the ear by opening the antrum, and breaking through its anterior wall into the external meatus; (2,) To expose the anterior surface of the petrous bone (roof of meatus) by trephining at a point half-an-inch above the anterior margin of the external (bony) meatus; (3,) To drain the abscess from below. A temporo-sphenoidal abscess is usually found within an area bounded in front and behind by lines drawn vertically upwards through the temporo-maxillary articulation and the middle of the mastoid process respectively, and extending upwards from half-an-inch to two inches above the meatus. If puncture of the brain or more extensive removal of bone and opening of the dura does not reveal pus, the lateral sinus should be examined by trephining half-an-inch directly behind the meatus. If necessary, bone may be still further removed and the cerebellum explored for abscess.

Mr. Barker[5], whose views we abstracted in the "Medical Annual"

for 1888, has this year published his Hunterian Lectures on this subject.

In forty-five fatal cases the *most prominent lesions* were observed in the following order of frequency: Meningitis in fifteen, cerebral abscess in eleven, cerebellar abscess in eight, pyæmia in seven, phlebitis of the lateral sinus in three, simple marasmus in one, but the *apparent causes of death* were as follows: Twenty died of meningitis, fourteen of pyæmia, five of cerebellar abscess, four of cerebral abscess, one of phlebitis of the lateral sinus, and one of marasmus. [It will, of course, be obvious that though the most prominent lesion might be abscess the clinical symptoms might show that death was due, not to the abscess directly, but to consecutive meningitis or pyæmia.] From this we draw the deduction that the *complications most to be feared are meningitis and pyæmia*, together accountable for thirty-four out of the forty-five deaths. Meningitis may arise from dura matral suppuration, encephalic abscess, or sinus phlebitis by rupture or extension. Pyæmia may start (1,) Directly from the diseased middle ear; or (2,) As the sequel to abscess meningitis or sinus phlebitis.

What are the preliminary symptoms of these complications? As a rule there has been otitis media for a considerable time. Suddenly the ear feels hot and uncomfortable, and frequently ceases to discharge. If the fundus of the ear be now examined there may be a cause of obstruction (polypus), but as often as not none such is observable. Malaise then comes on, with or without a rigor. The temperature rises, there may be nausea or vomiting. Earache may or may not be present, but there is apt to be pain in the mastoid region, often running down the neck and up to the temple. The pulse is often frequent, the tongue foul, and at an early stage there may be diarrhœa. In fact there is septic infection grafted on an ordinary saprogenic suppuration.

An excellent *exposé* of the symptoms of abscess meningitis, sinus phlebitis, and pyæmia is given by Barker. We would emphasize the following points: *Abscess of the brain*, unless accompanied by meningitis, is characterized chiefly by the headache, which may be intense, but is often dull and more or less localized, a subnormal temperature and slow cerebration, and late coma rather than delirium or excitement. The pulse is slow and the bowels persistently constipated. In some cases there is tenderness on pressure or percussion. There may be deafness in the opposite ear from implication of the auditory cortical centre. *Meningitis* gives rise to sharp general headache, with delirium, high temperature, rapid pulse, irregular respiration (rapid if

the meningitis affects the convexity, slow or of Cheynes-Stokes character if basal), early vomiting, and constipation, unless from septic poisoning diarrhœa is set up. In *sinus phlebitis* the symptoms are more those of septic poisoning. There is an initial rigor (not necessarily repeated), with oscillating temperature, rapid pulse and respiration, usually delirium, vomiting, and diarrhœa. There may be local evidence of thrombosis of the internal jugular vein. *Pyæmia* comes on with recurring rigors and oscillating temperature, small rapid pulse and respiration, early vomiting, delirium and diarrhœa.

It will be readily seen that an unavoidable degree of vagueness attaches to the subjective evidence of the various conditions we have analyzed, especially when we note how usual it is for them to occur in combination, and how the symptoms of one tend to mask those of another which may co-exist. For instance, how the dull localized headache, low temperature, and slow cerebration of cerebral abscess disappear in the presence of the sharp general headache, high temperature, and delirium of meningitis. On the other hand, when we turn our attention to the teachings of morbid anatomy we get most important guidance. Thus we learn the remarkable frequency with which cerebral abscess occurs in adults and precedes the meningitis which we recognize so much more easily. In children, on the other hand, cerebral abscess is rare, meningitis produced by extension from the tympanum, common. Pyæmia, the most serious complication, with its oscillating temperature and recurring rigors, is in well-marked and advanced cases fairly recognizable, but in its earlier stages it may be undistinguishable from the pyrexia of meningitis, or even the sapræmia or septic intoxication due to retained exudations in the middle ear.

This brings us to the question of clinching the diagnosis by means of *exploratory operations*. In the first place we must remember that the symptoms we have described as preliminary, and even some of those characteristic generally of serious intracranial complication, may be produced by uncomplicated suppurative median otitis. The dreaded pyæmia may also, though rarely, arise directly by infection in the middle ear alone, without the previous supervention of sinus phlebitis. We must first, therefore, exclude sapræmia from retained exudation by thorough purification of the middle ear by all the means otology provides. Inflation through the Eustachian tube, syringing with antiseptic fluids and detergents for the removal of saprophyte-containing fluids, *débris* of epithelial tissue, cholesteatomatous masses (if entirely accessible), removal of granulations by means of the ring-knife, *incision of the membrana tympani*, *etc.*, failing to produce an

immediate improvement, no time should be lost before *opening the mastoid antrum* and either removing the entire partition between this cavity and the meatus and tympanum so as to throw them into one, or making so large a communication as to render thorough irrigation absolutely efficient. In many cases this will be sufficient to relieve all the serious symptoms. Should this not be so, it is our next duty to *expose the anterior surface of the petrous bone* and examine the region of the roof of the tympanum and petro-squamous suture, unless erratic pyrexia and rigors suggest the imminence of pyæmia, and direct our attention rather to the lateral sinus, thrombosis of which is usually (according to Pitt, invariably) the precursor of that disease. In the latter case we are called upon to *expose the lateral sinus*, especially in the presence of such objective evidence as fulness, hardness, and tenderness in the line of the internal jugular vein, or exudation of pus from the emissary vein in the mastoid foramen if exposed and opened. Subdural pus in the groove around the sinus may be thus evacuated, and the condition most likely to excite phlebitis removed. The next step we are called on to take is the further removal of bone upwards or backwards, to enable us to *explore with a cannula or grooved needle the tempero-sphenoidal lobe and the cerebellum*—the former a proceeding of well-proved efficacy, the latter already successful. When uncomplicated cerebral abscess is probably present, Mr. Barker's simplified operation is to be recommended. This consists in perforating with ¼-inch trephine over a spot 1¼ inches behind the centre of the bony meatus and 1¼ inches above Reid's base-line, and exploring the tempero-sphenoidal lobe by means of a hollow needle. A vertical incision ¾-inch long is sufficient. For the prevention of the extension of septic phlebitis Mr. Victor Horsley has advised the *ligature of the internal jugular vein.* Mr. Arbuthnot Lane has in a number of cases anticipated pyæmia by ligaturing the vein, as also the lateral sinus external to the torcular Herophili and then irrigating the venous channel. Naturally this is only done after a careful exploration of the osseous groove. His results certainly prove the feasibility of the procedure, but the indications justifying or calling for its adoption are not, we consider, as yet fully established. The opening made in the cranium may be utilized for the exploration of the meninges—protusion and absence of pulsation of the dura calling for its incision. In cases of unmistakable general meningitis further exploration is, in the present state of our knowledge, useless and unjustifiable, but in localized and especially plastic forms judicious irrigation may be hopefully practised.

VI.—Anatomical Points and Measurements.

Dr. Ambrose Birmingham[3], in some papers on "The Mastoid Region of the Skull," gives the results of his examination of a large number of skulls. The following are some of the most useful :—

Distance between the posterior wall of the bony meatus and lateral sinus :—Maximum, ¾ inch ; minimum, ⅛ inch ; average, ½ inch.

Height of roof of tympanum and antrum, or floor of middle fossa, above the upper margin of the bony meatus :—Maximum, ⅜ inch ; minimum, $\frac{1}{16}$ inch ; average, ⅝ inch.

Hence, if we wish to avoid opening the middle fossa or the sulcus for the lateral sinus in tapping the mastoid antrum, we should perforate in the angle enclosed by a horizontal line touching the upper margin of the meatal orifice and by a vertical line one-eighth of an inch behind that orifice.

Depth of the inner wall of the antrum from the surface of the mastoid :—Maximum, ⅞ inch ; minimum, ⅝ inch ; average, ¾ inch.

We may therefore perforate to a depth of five-eighths of an inch, but not further, without risk of injuring the facial nerve or the external semicircular canal.

Hartmann, out of fifty specimens, found the distance of the facial canal to be under ¾ inch in six (twice, 17·5 mm. ; four times, 18 mm.), and of the external semicircular canal under ¾ inch in five (once, 17 mm. ; twice, 17·5 mm. ; twice, 18 mm.).

Height of the upper margin of the lateral sinus above Reid's base-line at a point 1¼ inch behind the centre of the meatus :—Maximum, $\frac{15}{16}$ inch ; minimum, $\frac{5}{16}$ inch ; average, ⅝ inch.

Barker recommends that in trephining for temporo-sphenoidal abscess the opening should be made 1¼ inch behind the centre of the meatus and 1¼ inch above Reid's base-line by means of a ¾ inch trephine. Such an opening would expose a portion of the sinus in fifteen cases out of a hundred. (Birmingham recommends, on anatomical grounds, that the pin of the trephine should be placed ½ an inch higher up.) The objection would not apply to the ¼ inch trephine recommended by Barker for his simplified exploratory operation.

Point for opening cerebellar abscess : 2 inches behind the middle of the meatus and 1 inch below the base-line.

Barker places it 1½ inch behind the centre of the meatus, but Birmingham says this comes very close to the mastoid process and endangers the occipital artery.

We may further recall the following : *Reid's base-line* is a horizontal

line running backwards from the lower margin of the orbit through the centre of the orifice of the external osseous meatus.

The fissure of Sylvius is marked out by a line from a point 1¼ inch behind the external angular process to a point ¾ of an inch below the most prominent part of the parietal eminence.

The temporo-sphenoidal lobe is bounded *above* by the sylvian fissure, *below* by the upper border of the zygoma and a line continued from this backwards to a point midway between the occipital protuberance and the posterior border of the mastoid process, *in front* by the posterior superior border of the molar bone, *behind* by a curved line joining the posterior extremities of the upper and lower boundaries.

VII.—Labyrinth and Auditory Nerve.

Pilocarpine *in Ear disease.*—Politzer[23] considers that subcutaneous injections of pilocarpine are particularly indicated in recent affections of the labyrinth, be they of a syphilitic nature or not. In protracted diseases of the labyrinth these injections, if tried, must be abandoned if no improvement results after from ten to fifteen injections. They are but rarely employed in otitis media acuta where the cavum tympani contains hardened exudative products; moreover in panotitis diphtheritica (bilateral) or in other diseases produced by infection. In suitable cases 2 drops of a 2 per cent. solution are each day injected subcutaneously into the forearm, the dose being gradually increased to 8 drops. These doses produce considerably increased secretion of saliva and sweat, which lasts for from thirty to forty minutes. Rarely there occur disagreeable symptoms such as nausea, vomiting, giddiness, fainting, collapse, spasm of the bladder, etc., which can be antagonized by the taking of 2 to 3 drops of a 3 per cent. solution of **Sulphate of Atropin.** If no distinct improvement takes place after a fortnight the remedy should be abandoned, and in cases where improvement in hearing occurs the injections should only be continued as long as the increase in the faculty of hearing is progressive.

The chief indication for the treatment is rapid development of deafness apart from any discoverable anatomical damage in the middle ear confirmed by tuning-fork investigation, showing along with extreme deafness a longer duration of hearing for the tuning-fork opposite the meatus than on the mastoid process ("air-conduction" better than "bone-conduction," or Rinne's experiment positive), especially with greater loss of hearing for high-pitched than for low-pitched tones, and, lastly, a history of symptoms pointing to implication of the labyrinth, such as giddiness or total inability to hear the ticking of a watch through the cranial bones.

The subcutaneous injection of pilocarpine is decidedly *contra-indicated* in cases of dry sclerotic catarrhs of the middle ear, notably those in which, with extreme deafness the tuning-fork can be heard longer on the mastoid than opposite the meatus ("bone-conduction" better than "air-conduction," Rinne's experiment negative), and in which low tones are less well heard than high pitched ones.

Local injections of several drops of a 2 per cent. warmed solution of **Hydrochloride of Pilocarpine** through the Eustachian catheter are beneficial in some cases of catarrhs connected with swelling, and a slight secretion from the mucous membrane of the middle ear (recognized by auscultation during inflation) and improvement following Eustachian inflation. The cases in which benefit results are few, and the treatment, which is more or less tentative, must not be continued beyond two or three weeks, and should be alternated with inflation by Politzer's method.

Politzer believes that the pilocarpine treatment has been frequently abused and adopted in unsuitable cases.

Neuritis of the Acoustic Nerve due to Meningitis.—Gradenigo[24] has found almost uniformly present in cerebro-spinal meningitis, in tubercular meningitis and otitic meningitis, an extensive bilateral purulent infiltration of the acoustic and facial nerves, the latter frequently escaping while the cochlear nerve is destroyed. [The extreme cases of deafness and of acquired deaf-mutism brought before us, may often on careful investigation of the history be traced to what in all likelihood have been attacks of meningitis.]

VIII.—Miscellaneous.

Aural Complications in Specific Fevers.—Dr. Hill ascribes 50 per cent. of the chronic ear diseases commencing in early life to the aural complications of fevers. Before attention was paid to the treatment of post-nasal adenoids the percentage of aural complications was higher. The amount of destruction to the organs of hearing is also much less under the present modes of treatment. Appropriate naso-pharyngeal medication in cases of measles, pneumonia and pertussis, is often sufficient to prevent the extension of inflammation from the pharynx to the middle ear. In cerebro-spinal fever, mumps occasionally, and in typhus [? sometimes cerebro-spinal fever erroneously diagnosed as typhus, Ed.], the labyrinth is usually primarily affected, and in such a condition of matters salicine and quinine is most injurious, while **Iodide of Sodium** internally, and **Pilocarpine** subcutaneously, are serviceable. He recommends the early paracentesis of

the membrana tympani, so strongly urged by all aural surgeons in acute otitis.

Deaf Mutes and their Education.—We are often asked as to the best mode of training up deaf mutes, and as we are apt to be dazzled with the happy results attained in many cases by the teaching of lip reading and speaking, we naturally without hesitation recommend the "oral" method. Dr. Macalister[25] points out that the method must be selected according to circumstances. For those who are well-to-do, as well as *for those who can hear a little, or were once able to hear*, the pure oral system is suitable. On the other hand, "experience has shown that children taught on the combined system" (signs as well as lip reading), "obtain a better and sounder education during the time they are at school than those taught orally alone, and they consequently become more useful members of society." For the poor and the masses of the deaf, therefore, he advocates the combined method as being most advantageous and most humane.

Gellé's Endotoscope[1].—For the detection of active fluxional or inflammatory conditions of the middle ear which might not be sufficiently obvious on ocular inspection Gellé makes use of a water manometer, fitting into the auditory meatus. The outer limb is of much smaller calibre, so that the slightest depression of the fluid in the proximal tube is rendered evident by a greatly magnified rise in the distal one. In this way he has demonstrated pulsatile movements of the membrane which were otherwise imperceptible, and diagnosed thereby an active congestive state of the middle ear. In some such cases the patients were quite unconscious of any pulsation. In other instances, where patients have complained of a "beating" in the ear, Gellé was able by the use of the endotoscope to eliminate the possibility of the symptom being attributable to active disease of the middle ear, and to trace it to a more central cause.

Dundas Grant on Compression of the Vertebral Arteries in Pulsating Tinnitus.—In connection with the above interesting communication of Dr. Gellé, the editor[2] would venture to bring again before the notice of his readers a method introduced by himself for the diagnosis of the source of pulsating tinnitus. In many cases of pulsating tinnitus not diminished by compression of the carotid he had found that digital pressure applied in the suboccipital region to the vertebral arteries was efficient in quieting or stopping the noises. By experiment on the cadaver he was able to prove that such pressure actually abrogated the flow through the vertebral arteries. From this he argued that pulsations thus checked were produced in the labyrinthine branches of the internal auditory artery, which, in its turn, is derived

from the basilar artery, the joint continuation of the two vertebrals. Such noises appear clinically to arise most commonly from vaso-motor disturbance, and to yield very frequently to the exhibition of the **Bromides.**

The pressure is to be exercised by means of the thumb and middle finger of one hand placed in the hollows behind and slightly below the mastoid processes. It is to be directed forwards, upwards, and inwards, counter-pressure being effected by means of the other hand, placed on the patient's forehead. As a means of temporary relief the principle may be applied by the placing of two conical pads in the positions described, a bandage or strap being bound firmly over them and round the forehead.

REFERENCES.—[1] "Ann. des Mal. de l'Oreille," 1891 ; [2] "Brit. Med. Journ." and "Congr. Internat. de Méd.," Paris, 1889 ; [3] "Dublin Journ. of Med. Sci.," Feb., 1891 ; [4] "Brit. Med. Journ.," March 22, 1890, *et scq.* ; [5] "Intracranial Inflammation starting in the Temporal Bone," Lewis, London, 1891 ; [6] "Brit. Med. Journ.," 1891 ; [7] "Ann. des Mal. de l'Oreille," March, 1891 ; [8] "Therap. Monat.," No. 10, 1890 ; [9] "Dis. of the Ear," translated by Law ; [10] "Pathologie des Ohres," 1891 ; [11] "New York Med. Jour.," Oct. 4, 1890 ; [12] "Ann. des Mal. de l'Oreille," Dec., 1890, and Supp. to "Brit. Med. Journ.," Feb. 14, 1891 ; [13] "Therap. Gaz.," Aug. 15, 1891 ; [14] "Arch. of Otol." April, 1891 ; [15] Supp. to "Brit. Med. Journ.," March, 28, 1891 ; [16] "Lancet," Nov. 1, 1890 ; [17] "Philadelph. Med. News," April 11, 1891, and Supp. to "Brit. Med. Journ.," Nov. 14, 1891 ; [18] "Lancet," Dec. 20, 1890 ; [19] "Lancet," Nov. 15, 1890 ; [20] "Berlin klin. Woch.," Heft 26, 1891 ; [21] "Lancet," Oct. 11, 1890 ; [22] "Practitioner," May, 1891 ; [23] "Lancet," Jan. 3, 1891 ; [24] "Ann. des Mal. de l'Oreille," Sept., 1890 ; [25] "Liverpool Med. Chir. Journ.," Jan, 1891, and Supp. to "Brit. Med. Journ.," June 13, 1891.

Synopsis.—(Vol. 1890, p. 242.) For furuncles of external meatus, apply 20% solution of **Menthol** on cotton wool, renewing it every twenty-four hours, or a super-saturated solution of **Boric Acid** in **Alcohol** may be used ; **Cocaine** is a useful palliative. To close old perforations : After the discharge is stopped, cover the aperture with egg-shell membrane, and dab this next day with a cotton-wool tampon impregnated with **Oil of Turpentine** ; **Antiseptic Cotton Wool**, or a small piece of thin celloidin may be used as artificial membranes. For hyperæmia of the tympanum, the instillation every two hours of a 10% solution of **Carbolic Acid** in **Glycerine** has given relief and prevented suppuration. For otalgia nervosa, **Antipyrin**, gr. xv, taken at once and followed by half the dose in two hours if the pain is still present.

(Vol. 1891, p. 160.) In simple perforation of Shrapnell's membrane wash out with **Resorcin** 3% solution, or **Corrosive Sublimate** 1 in 200, till fœtor has gone ; then use either alcoholic solution of **Boracic Acid** 1·05:20, **Iodol**, solution of **Nitrate of Silver**, 1 in 10, or minute **Iodoform Bougies.**

Removal of polypi, granulations or cholesteatomatous masses by **Sharp Spoons**. The last-mentioned may require preliminary softening by a **Soda Lotion** or **Spray of Carbolised Glycerine** or **Cotton-Wool Tampon** soaked in oil. Application of **Collodion** for relaxed membrane. ℞ Resorcin 0·1 gramme (gr. 1½), Cocain. Hydrochlor. 0·2 to 0·5 gramme, (gr. 3 to 7½), Aq. Dest. 10·0 grammes (♏150), M. A few drops warmed are introduced for from five to fifteen minutes, and then removed with wool thrice daily; useful as antiseptic and anodyne; for great pain **Morph. Hydrochlor.**, 0·01 to 0·05 grammes, (gr. ⅙ to ¾) may be added. If ear drops cause eczema of meatus, apply one of the following after their removal:—℞ Hydrarg. Bichlor., gr. ⅛; Lanolini, Vaselini, āā gr. 75, M; ℞ Zinci Ox. gr. 15, Ac. Borici, gr. 7, Lanolini, Vaselini, āā gr. 75, M; ℞ Ac. Borac., gr. 15; Ung. Diachyli, Lanolini, āā, gr. 75, M. For chronic catarrh of middle ear, a few drops 5% solution **Cocaine** injected through Eustachian Catheter are often useful.

ECZEMA.

T. Colcott Fox, M.B.

Hebra unquestionably did a great work when he built up his conception of "eczema," but it is evident that this group of diseases will soon be completely reorganized. The Vienna school, as represented by Kaposi, conceive "eczema" as an acute or more often chronic affection, characterized clinically by a pruritic polymorphic eruption, consisting sometimes of papules, vesicles, or pustules irregularly disseminated or closely aggregated, sometimes of diffuse redness and swelling of the skin, the surface of which desquamates or becomes humid or covered with gummy crusts; anatomically, by all the forms and degrees of inflammation, with a predominant serous exudation. Eczema is then divided into an idiopathic and symptomatic group. The first includes the artificial eczemas, or those determined by the multitude of external irritants, chemical, dynamical, or mechanical, including scratching, and those eczemas which develop as the direct consequence of certain local alterations in the same skin. The symptomatic are those that one can consider as a direct or reflex consequence of the state of the nutrition, constitution, of the mass of the blood and its juices, or of the organic system—the skin excepted—*e.g.*, arising in chronic dyspepsia, diabetes, albuminuria, dysmenorrhœa or uterine affections, chlorosis, anæmia, pregnancy, and at the end of lactation. The evolution of new patches of eczema at a distance from the original seat of irritation is explained on the hypothesis that the skin becomes for the time morbidly sensitive, and responds to the most trifling irritation, whilst later they arise by a reflex alteration of the vessels. Hutchinson, on the other hand, holds that a patch of eczema, like other inflammations, after a time develops infective properties. This wide spread net embraces a number of purely local inflammations (dermatitides), also scabies and phthiriasis, ringworm, impetigo contagiosa, etc. The warrant for considering this ensemble as a morbid entity is that we can very often see these various forms

existing side by side, that during the course of the malady the different forms are constantly being transformed one into the other, and that we can always determine artificially on any part of the skin and on any individual all the varieties of eczema, with their polymorphism and transitions. To this the modern French school, as represented by Besnier, reply that this ensemble is united only by the objective characters, which is not a sufficiently strong bond, and they traverse the statement that these lesions can be determined artificially at will. Local irritants will produce eczematoid lesions, a simulation of eczema, but not a true eczema. In the vast majority of subjects, the irritant removed, the inflammation ceases, and it is only in a minority, who have a special predisposition, that a true eczema may follow. A study of the causes, nature, course, and treatment, etc., they say, discloses morbid individualities distinctly differentiated, ranged under this uninominal classification, and the time approaches when the composite group must be dismembered. At present "eczema" has an illimitable and purely objective signification, applied to a collection of states really completely distinct, but having lesions and symptoms in common. The epiphytic and animal parasitic diseases have been placed elsewhere, the local dermatitides should properly be separated, and there is probably a sweat eczema (dyshidrosis), and a sebaceous eczema (eczema seborrhœicum). The latter affection, for the recognition of which we are so much indebted to Unna, is now being generally accepted.

If we study the etiology of eczema given in the text books of different countries we see how wide the divergences of opinion are. Kaposi says that we do not know any "dyscrasia" capable of directly determining eczema. At the most one can only say that as far as they alter the nutrition of the skin, anæmia and chlorosis lead to irritability of the integument, which readily responds to slight irritation. Nervous influences, the circulation in the blood of irritating products, as in gout, agencies lowering the nutrition, as struma, etc., have different values assigned them, either as predisposing or exciting causes. The French believe that lymphatisme, *i.e.*, the old scrofula minus tuberculosis, predisposes strongly, and Unna even holds that the tubercle bacillus can excite a special form of eczema. Unna finds much that is illogical and paradoxical in the English conception ; for instance, that eczema can arise acutely from an external irritant and pass on into a chronic condition, with, perhaps, separate foci, although the primary cause is removed, without our postulating for them any fresh causation. The common figure of speech that "the skin gets into a bad habit" will not explain it. Liveing's assumption of a primary

constitutional dyscrasia, and a subsequent continuance of the eczema as a strictly local affection, he finds more plausible. Hutchinson believes that eczematous inflammations of the skin are due to varying and complex causes, which may combine in very different proportions in different cases. Unna seeks to explain all the contradictions and mysteries connected with "chronic eczema" by supposing the proliferation of a germ in the epidermis and its appendages, and its necessary corollary, a good nutrient basis, a theory which happily embraces and reconciles everything which has been previously placed amongst the various predisposing and exciting causes.

The choice of the remedy and its form of application, says Unna, is determined in seborrhœic eczema, as in all forms of eczema, by the degree of inflammation present. When the inflammation and oozing are pronounced, the mild specifics are indicated, such as zinc oxide, lead oxide, sulphur, resorcin, in the form of powders, lotions, pastes, and glycerine gelatines. When the inflammation is less and the dryness greater, the stronger specifics, such as chrysarobin, pyrogallol, tar, mercuric oxide, are indicated, especially in the form of salves, salve mulls, plaster mulls, and waterproof dressings. A really "irritating" treatment is never necessary if the horny layer be kept thinned down. Arsenic is the only internal remedy exercising specific but limited influence on seborrhœic eczema. Other forms of treatment have only an indirect influence.

Dr. George T. Elliott, of New York, accepts fully the individuality of E. Seborrhœicum and its existence as a special form of cutaneous catarrh, and he also testifies to its relative frequency compared with other forms of eczema. The majority of his patients enjoyed good or perfect functional health. Females predominated. No age was found exempt. It may be found side by side with lesions of other diseases, *e.g.*, acne, seborrhœa oleosa, or a mixed infection may occur and form a mixed lesion partaking of the characters of both diseases, *e.g.*, with rosacea, syphilis, etc. Seborrhœic eczema develops primarily, and with few exceptions, on the scalp, and thence extends downwards, not following any particular regularity, though showing a decided preference for certain regions, as the face, sternal region, interscapular space, etc. The primary stages of the disease are represented by the clinical manifestations to which the names, "pityriasis," "seborrhœa sicca capitis," are given. Elsewhere than the scalp, the process may also be indicated by scaly, pale macules, or reddened papules, or nummular-like lesions, or more or less large patches. The lesions tend to spread peripherally, and may become ringed. Desquamation may become marked, or weeping occur.

Dr. Edward Blake thus summarizes Dr. Shuldham's treatment of "dandruff": Wash the head well with hot water and a soap carefully prepared with 2 ounces of pure soft soap, ½ an ounce of rectified spirits of wine, and 10 minims of oil of lavender. Carefully cleanse the head with plenty of warm water, and thoroughly dry with a warm soft cloth. Then rub in firmly and freely a glycerole of tannin (grains x to xxx to the ounce) or resorcin. Repeat the process once, twice, or thrice a week as the symptoms may require, and when all the dandruff is removed dress the head daily with carbolic oil (absolute phenol, grs. x; oil of cinnamon, ℥j; olive oil, ℥j; warmed together and decanted).

Dr. George T. Elliott, in describing two cases of favus, one of tinea circinata, and fifteen cases of eczema appearing under plaster of Paris dressings, discusses the etiology of eczema. The only eczema purely of internal causation, in his opinion, is the one which results from reflex nervous influence or nerve irritation. He regards the cases described as of some value in the discussion of the parasitic nature of eczema. **Ichthyol**, in aqueous solution (3 to 10 per cent.) or in zinc ointment, gave brilliant results after subsidence of the acute stage.

Klotz obtained very good results in three cases of eczema by daily hypodermic injections of 10 to 15 drops of 1 per. cent. solution of **Muriate of Pilocarpine**. Hardaway, discussing these results, expressed an unfavourable opinion of this method of treating chronic skin diseases.

R. Glasgow Patteson finds that ℥j of **Creolin** to ℥viij of water forms a bland and soothing milky emulsion, with a strong tarry odour, which has a marked effect in allaying irritability and itching, prevents the formation of scabs and crusts, and appears in a striking manner to moderate the pus-producing activity of certain forms of eczema. In squamous eczema he applies, between the bathing with creolin lotion, *an ointment composed of zinc oxide, white precipitate, and glycerole of the subacetate of lead.* The following **Creolin Ointment** has also been used with good effect by Rothe:—

℞ Creolin 1·5 grammes | Ol Menth. Pip. gtt. v.
Cretæ Præp., Axung. Porci, āā 15·0 |

For eczema ani et genitalium, Lustgarten, of New York, applies twice daily an ointment composed of:—

℞ Oleate of Cocaine 1–2 parts | Olive Oil 10 parts
Lanolin 40 parts |

And followed by the use of some absorbent powder.

Unna, for obstinate eczema scroti, recommends **Iodoformi**, ℥ij to iv.; **Zinci Oxidi**, ℥jss; **Aq. Calcis, Ol Lini.**, āā ℥jss., M. ft. applicatio.

Cranstoun Charles confirms the favourable action of **Ichthyol** given internally and applied externally. It not only limits the spread of inflammation, but likewise tends to prevent vesication.

On the other hand several authors have described an eczematous eruption arising from the use of creolin to wounds.

Saalfield, in eczema of the face and hairy scalp of children, suggests diminishing quantity of nourishment given, and especially the fatty elements of the diet, the use of enemata for chronic constipation, softening crusts with olive oil, and the application of **Boric Acid** and **Zinc Oxide Paste**. Another writer recommends gr. x of **Thymol** to an ounce of zinc paste.

For *Intertrigo*, Wertheimer applies, three or four times daily for an hour at a time, a compress wetted with a lotion composed of 1 part of sublimate in 2000 parts of distilled water. Saalfield, when the skin is not too moist, uses compresses moistened with equal parts of a 5 per cent. boric acid solution and liq. plumbi. subacetatis.

REFERENCES.—Unna, "Brit. Journ. of Derm.," Aug., 1890; Kaposi's "Lectures," ed. by Besnier and Doyon, 2nd ed., 1891; Roberts, "Liverpool Medico-Chir. Journ.," July, 1891; Patteson, "Dub. Med. Journ.," July, 1891; J. Hutchinson, "Lancet," Oct. 17, 1891; Bulkley, "Med. News. Philad.," Jan. 31, 1891; Cranstoun Charles, "Lancet," Sept. 26, 1891; Rothe, "Brit. Journ. of Derm.," Nov., 1890; Geo. T. Elliott, "New York Med. Journ.," Feb. 14, 1891; Edward Blake, "Lancet," Dec. 27, 1890; Geo. T. Elliott, "New York Med. Journ.," March 11, 1891; "Therap. Gaz.," Sept. 15, 1890; Klatz., "Journ. Cut. and Gen.-Urin. Dis.," Nov., 1890; Saalfield, "Rev. Mens. des Mal. de L'Enf.," Aug., 1890.

EMPHYSEMA.

F. de Havilland Hall, M.D.

The first indication in the treatment of pulmonary emphysema consists in the employment of measures to prevent the extension of the disease, and so far as possible to restore the pulmonary structure to a condition of health. This indication is best carried out by means of nourishing food, fresh air, careful habits, avoidance of strains, etc., and the administration of tonics, more especially some of the preparations of strychnine. One of the most valuable of these is an elixir of the phosphate of iron, quinine, and strychnine, a teaspoonful of which represents: of the phosphate of strychnine, $\frac{1}{60}$ to $\frac{1}{100}$ of a grain; phosphate of iron, 2 grains; and phosphate of quinine, 1 grain. This dose should be taken three times a day before meals. If it fails to agree, as is not often the case, recourse must be had to other preparations. Dr. Crook[1] does not believe strychnine to possess any

peculiar value in restoring the diseased lung tissue, and he prescribes it only for its tonic effects. Certain mechanical means have been devised to facilitate resolution of the involved air-vesicles. They mostly involve the principle of pneumatic aspiration, the patient inhaling condensed air and exhaling into rarefied air. The idea involved is that the inhalation of condensed air retards the respiration, allowing more oxygen to be consumed, and thus causes a more complete tissue metamorphosis ; while exhaling into rarefied air facilitates the withdrawal of the abnormal amount of residual air in the distended alveoli. The most satisfactory apparatus is that of Waldenburg, as modified by Tobold. A second indication in the treatment of emphysema consists in the relief of the complications, chronic bronchitis being, as a rule, the most important. Here, as in bronchial asthma, we shall find the iodide of potassium to be of great advantage. It must be given in considerable doses and long continued. Dr. Crook usually combines it with the compound spirit of ether for the relief of the dyspnœa. In advanced cases a dilated heart and œdematous lower extremities are apt to demand attention. A favourite formula under these circumstances is as follows :—

R Spt. Æth. Co.	℥j	Inf. Digital.	ad. ℥iv
Ammon. Carb.	℥iij		

M. Sig. A teaspoonful in a little water every two, three, or four hours.

We can not hope to cure many cases of this disease, but it is remarkable how even in apparently the most unfavourable examples the patients will rally and attain a degree of comparative comfort under proper management.

REFERENCE.—[1] "New York Med. Journ.," September 6, 1890.

EMPYEMA OF ANTRUM OF HIGHMORE.

Greville MacDonald, M.D.

The opinion expressed in last year's "Annual" to the effect that the method of transillumination of the antrum was of very relative value appears to have gained ground among specialists during the past year. Ziem[1], of Dantzig, advocates, in preference, exploratory puncture through the alveolar border, and irrigation. Jeantry[2] agrees as to the superiority of puncture, but advises its performance through the inner wall of the antrum, beneath the inferior turbinated body. The whole subject was discussed at a recent meeting of the French Otological and Rhinological Association[3], when Dr. Moure, of Bordeaux, cautioned against the over-enthusiasm now displayed in sacrificing healthy teeth for the exploration of the cavity. In this most will agree ; and it appears to the writer that upon the condition of the teeth depends the question whether we shall open from the alveolar

border or from the inferior meatus. It would be well, often, to take a dentist's opinion on the subject, although he not infrequently claims the sole right of diagnosis in these cases. Concerning the relative frequency of tooth disease and nose mischief as etiological factors, an interesting correspondence took place lately between Messrs. Sewill, MacDonald, and H. Mackenzie[4].

REFERENCES.—1"Berlin. klin. Woch.," June 15, 1891; 2"De l'Empyème latent de l'Antre d'Highmore," Bordeaux, 1891; 3"Journ. of Laryngology," Aug., 1891; 4"Lancet," Feb. 7, 14, and 21, 1891.

Synopsis.—(Vol. 1891, p. 189.) Injection of Solution of Hydrogen Peroxide (1 part to 12 of water) into antrum through hiatus semilunaris.

ENDOMETRITIS.

R. Milne Murray, M.A., M.B.

Chronic Endometritis.—There is an absence of any special novelty in methods of treatment of this condition, but modes of procedure previously practised have been confirmed or modified. The chloride of zinc pencils referred to in last year's "Annual" have been employed with success by several, and placed in competition with the curette.

Polaillon[1], Charpentier, and Grandmaison[2] strongly advise the use of these in preference to the curette.

Gatterno[3] advises the drying of the interior by sounds covered with cotton-wool, and the stuffing with iodoform gauze, accompanied by packing of the vagina.

Skutsch[4] divides endometritis into two varieties—a hæmorrhagic and a catarrhal form. For the former he recommends dilatation of the cervix, curetting, and cauterization; for the other he advises dilatation with a metal dilator, and then daily irrigation of the endometrium. For this he uses a simple catheter (avoiding complex instruments), and at first uses a 3 per cent. solution of soda to dissolve the mucus, and afterwards 2½ per cent. carbolic acid or 1 to 5000 corrosive sublimate. He believes the effect is due to the mechanical influence of the irrigation—not to the chemical effect of the lotion.

Duke[5] has obtained excellent results in several cases of endometritis by the introduction of dry powdered boracic acid. A curved vulcanite tube, about the diameter of a 12 catheter, is partly filled with powdered boracic acid; and, by means of a piston, this is deposited in the interior of the uterus. A dozen applications of this may be required.

Many authorities confirm the good results obtained by means of the **Curette.** In both hæmorrhagic and catarrhal forms its use seems to be in most cases followed by improvement, and often by complete cure. The operation is one, however, which is by no means free from danger, and rigid antisepsis is a matter of primary importance. Some skill and much care is required to avoid injuring the deeper tissues

during the operation, and the application of carbolic acid or strong iodine should always follow the operation. Complete rest and the use of the vaginal douche for some days afterwards should be insisted on.

Some years ago Lawson Tait advised the dilatation of the cervical canal, and the free application of the Paquelin cautery in obstinate cases. There is no doubt of the success of this somewhat heroic method in certain cases. One case in point is recorded by Dr. Gehe[6].

Dilatation of the Cervix.—In connection with the treatment of the endometrium attention may be directed to what is usually a preliminary procedure, namely, dilatation of the cervical canal. There are practically four methods by which this may be effected: (1,) By sponge, laminaria or tupelo tents. This method, introduced by Sir James Simpson, was for long the only method available. Its slowness and danger from septic complications have thrown it into disuse, save in special cases; (2,) By packing with iodoform gauze. This method, first used by Vulliet, though slow, has the advantage of being safe and painless, and the patient may go about her duties while the process is going on; (3,) By graduated bougies, Tait's Hegar's, etc. By these, dilatation can be effected at a sitting. Care must be taken to introduce the bougies in their proper order, and each one should be left in for a minute or more to overcome the spasm which is apt to accompany their forcible introduction. The danger associated with their use is laceration of the canal instead of dilatation; (4,) By expanding steel dilators. By means of these instruments sufficient dilatation can be effected at a single sitting to permit exploration or treatment of the uterine cavity. But this operation requires especial care, and many of the forms of these instruments made at present are particularly dangerous. The first danger is that too much force be used in introducing the instrument. Kelly[7] records a case where it was forced through the angle of an antiflexed uterus, causing death from peritonitis. The second danger is that too much force may be used in expanding the blades. This is especially likely to happen in those instruments whose blades are expanded by a screw on the handles. With such an appliance it is quite impossible to judge of the force employed, and a dangerous split, involving the whole cervical thickness, may readily occur. The instrument should be introduced with all the care of a sound, a tenaculum being used to straighten the canal in flexions. The handles should be brought together slowly and with great attention to the effect on the lumen of the canal, and the instrument should be turned round and round and opened in all directions, so as to dilate the canal equally in every way. With proper

precautions these instruments may be used with perfect safety, and will effect sufficient and symmetrical dilatation in a very satisfactory fashion.

REFERENCES.—[1]"Nov. Arch. d'Obstet. et de Gynecol.," Dec., 1890; [2]"Gazette des Hopiteaux"; [3]"Wiener klin. Woch.," 46, 1890; [4]"Central. fur Gynakol.," 23, 1891; [5]"Prov. Med. Journ.," March, 1891; [6]"Archiv. de Tocol. et de Gynec.," Jan. 1891; [7]"Amer. Journ. Obst.," Jan., 1891.

ENTROPIUM. (See "Eye.")

ENURESIS.

Synopsis.—(Vol. 1891, p. 190.) ℞ Rhus Aromat. Ex. fl. ʒiij, Elix. Aromat. ʒiss. Aq. Cinnam. *q.s.* ad. ʒiij. Sig. Half a teaspoonful to a teaspoonful four times a day after a meal. Avoid fluid after 4 p.m., and restrict meat diet; Cold Salt Water Baths.

EPILEPSY. *Græme M. Hammond, M.D., New York.*

At the suggestion of Dr. H. C. Wood, Dr. Charles S. Potts[1] has recently employed a combination of **Bromide of Ammonium** and **Antipyrin** in cases of idiopathic epilepsy. The combination of the two drugs was used in forty-three cases. In none did it fail to cause marked amelioration of the symptoms, and in some instances it gave relief when all other remedies had failed. There were no symptoms of bromism or any of the disagreeable effects which sometimes follow the administration of antipyrin.

Dr. R. R. Lansing[2] reports a case of epilepsy which was complicated, however, with a strong hysterical element, which was promptly relieved by the hypodermic injection of $\frac{1}{100}$ of a grain of **Glonoine.**

In the "Proceedings of the St. Petersburg Society of Psychiatrists[3]," reference is made to the excellent results obtained in the treatment of epilepsy by the internal administration of **Bromide of Gold** in doses of $\frac{1}{5}$ of a grain. It is claimed that this preparation may be given for a long time without any of the unpleasant effects which usually follow the continued use of other bromine salts.

Poulet[4], while admitting that bromide of potassium is superior to any other form of bromide, states that in those cases in which the drug produces excessive anæmia, or only partially controls the attacks, that better results are secured if the bromide is combined with either Calabar bean, picrotoxine, belladonna, or digitalis.

His selection of the drug to be used in combination depends, to a great extent, on whether the pupil is dilated or not. If it is dilated, Calabar bean is selected. If it is contracted, belladonna is employed. If no indication is furnished by the state of the pupil, the choice of a

remedy is determined by experimenting. In the course of two or three months it can be definitely ascertained which is the best.

Dr. J. William White[5], in his excellent paper on the curative effect of operation *per se*, reports fifty cases in which the operation of trephining was performed. Although nothing abnormal was discovered to account for the symptoms, yet twenty-five of those cases were reported cured, eighteen were improved, and in only three cases did a relapse occur. Three cases were reported from six months to eight years after the operations were performed. Thirty cases of epilepsy were treated by the ligation of blood-vessels. Of these, fourteen were reported cured, fifteen as improved, and one died. In the fatal case the right common carotid artery was tied. In ten cases of epilepsy castration was performed. All were reported as cured. Four of the cases were reported over two years after the operations. Tracheotomy was performed nine times. Two cases were reported as cured, six as improved, one as much improved. In twenty-four cases the superior cervical ganglia was removed. Six remained well at the end of three years, ten were improved, five remained unimproved. In six cases of incision of the scalp, nothing was found to account for the disease. Three of these cases were reported as cured three months after the operations, one was reported cured after one year, and two after two years. Twelve cases of epilepsy were reported as cured by such operations as stretching the sciatic nerve, tenotomy of the external recti muscles, burning of the scalp, puncturing the heart, and circumcision, while thirteen cases of spontaneous cure were referred to in which the epilepsy ceased after traumatism, such as burns, falls, wounds, and amputations.

Dr. White believes that those curative results were obtained by powerful impressions acting upon the emotional or intellectual nature, which affected the organic processes of secretion, nutrition, etc., and which arrested pathological changes, and brought about reparative or recuperative action.

REFERENCES.—[1]"Therap. Gaz.," Nov. 15, 1890; [2]"Therap. Gaz.," Jan. 15, 1891; [3]"Practitioner," Oct., 1891; [4]"Thérapeutique," 15 Mars. 1891; [5]"Brit. Med. Jour.," July 18, 1891.

(Vol. 1891, p. 193.) When great debility and mental dulness follow use of bromides, substitute **Chloral** for a portion of bromide, *e.g.*, ℞ Chloral ℥ij, Sod. Bromidi ℥x, Aq. ℥vij; a teaspoonful contains Chloral, gr. iii, and Bromide, gr. 12: or ℞ Chlorali ℥ss, Sod. Bromidi ℥j, Aq. ℥vij; a teaspoonful contains Chloral gr. v, and Bromide gr. x. For *petit mal* give moderate **Bromide Course** followed by free use of **Strychnine** and **Atropine**. ℞ Strych. Sulph. gr. ii, Ac. Nitro-mur. Dil. ℥j, Solve. Sig. 6 to 16 drops after meals, well diluted; for weakness of ocular accommodation and interni muscles,

Atropine, gr. $\frac{1}{300}$ in granule. Sig. 3 to 6 daily where externi muscles are weak. **Digitalis, Ergot** and **Ergotine** may assist. In cardiac cases **Digitalis, Strophanthus** and **Pure Caffeine.** **Arsenic**, gr. $\frac{1}{200}$ in granule thrice daily after meals for a month for bromide acne, and wash face with warm water, soap, and a little ammonia daily, using **Sulphur Ointments**, if any. **Iron** and **Cod Liver Oil** may be required. **Hydrarg. Bichlor.** gr. $\frac{1}{100}$ to $\frac{1}{30}$ in **Gentian** or **Calisaya Bark Elixir** for idiopathic cases in children with Hutchinsonian teeth. **Amylene Hydrate**, gr. xxx to lx in 10% solution increased to ʒij daily for six or eight weeks. **Antifebrin** or **Biborate of Soda**, gr. vii to lx thrice daily where bromides fail, the latter specially for nocturnal attacks. Perosmic Acid is of little use. ℞ Tanret's Ergonine 0·01, Lactic Acid 0·02, Cherry Laurel Water, 10 centigrammes ; used subcutaneously in epileptiform and apoplectiform attacks. **Muriate of Pilocarpine**, gr. $\frac{1}{8}$ hypodermically over ovary for hystero-epilepsy with maniacal excitement. **Bromide of Gold**, gr. $\frac{1}{2}$-1 (p. 13), **Tinc. Cannab. Indica**, ♏ 10 in epileptiform convulsions (p. 18). **Mutisia Viciæfolia** (p. 41).

EPIPHORA. (See "Eye.")

EPISCLERITIS.

(Vol. 1891, p. 200.) **Colchicine**, gr. $\frac{1}{60}$ in granule, 2 to 4 in twenty-four hours, has relieved when all else have failed. **Corrosive Sublimate**, 1 in 5000 solution, sub-conjunctival injection of a few drops twice a week benefited when internal remedies failed.

EPISTAXIS.

Synopsis.—(Vol. 1890. p. 257.) **Styptics** used by means of speculum ; supine posture ; tampons saturated with **Oil of Turpentine** (irritating to mucous membrane) ; injections of **Citron-juice.**

(Vol. 1891, p. 200.) Application of **Electric** or other **Cautery** to bleeding point. Rectification of septal deformity.

EPITHELIOMA.

Synopsis.—(Vol. 1891, p. 11.) **Aristol** as dusting powder for superficial epithelioma.

ERYSIPELAS. *T. Colcott Fox, M.B.*

Rothe, who used to paint erysipelas every two hours with **Carbolic Acid, Sp. Vini Rect.**, āā 0·5 ; **Tr. Iodi**, 1·0 ; **Glycerin**, 10·0 ; **Ol. Menth. pip.**, gtt.ij, now gets excellent results by treating the affected parts two or three times daily with the following composition, and covering up with cotton wool :—

℞ Creolin	1·5	Ol. Menth. Pip.	gtt.v.
Cret. Præp., et Axung. Porc., āā	15·0		

Charles P. Allen records his conclusions on the treatment of erysipelas from a large experience. Internally he gives such symptomatic treatment as the nature of the case may require, *e.g.*, antipyretics only in case of high or persistent fever (over 103½° to 104°) ; then antipyrin in dose of at least gr. xv to xx for an adult, guarded by alcohol ; cooling drinks. Calomel or saline aperients in full dose, if constipation. If much weakness, alcoholic drinks given freely,

especially at critical periods, and iron or iron and quinine; digitalis if much fever and prostration; bromide for delirium; antipyrin or phenacetin for headache, with cold applications to head, and as concentrated and nutritious a diet as possible.

Second, locally, he paints the patch and surrounding margin of the healthy skin thickly with **Ichthyol** in collodion, ʒj to ʒij to ʒj. If the scalp is the region affected, a watery solution or ointment of ichthyol can be employed. To arrest the spread, he makes an attempt either with the band of adhesive plaster or by scarification, or both, the latter to follow the former, in case the disease spreads beyond the adhesive strips.

In erysipelas of the face, which had not yet reached the forehead, or at least its upper part, he would apply a band tightly about the forehead and just above the ears, cutting the hair in a strip around if necessary to secure firm pressure. The chances of arresting the process here should be at least equal to those of checking the spread upon an extremity, for we have a hard bony base over which to make our compression. If the boundary is passed, then he should at once have the scalp shaved, and apply another band higher up. The hair should be cut in any case in which the scalp is invaded or threatened. Then the same application of ichthyol in collodion can be made, as to the face or other part. If there be much tension, swelling, heat, and discomfort (which is not apt to be the case under collodion), any oily substance can be applied over it.

Naturally, when the erysipelatous process has its sources in a pus collection, such as an abscess, pustule, ulcer, foul wound, carious tooth, diseased duct, etc., the first care must be to secure as prompt and thorough disinfection and cleansing as possible. Pus must be destroyed and purity maintained. A solution of the peroxide of hydrogen will often be found useful in effecting this purpose.

As a prophylactic measure in those predisposed to repeated attacks, great care should be taken to discover and cure affections of mucous membranes, carious teeth, ulcerations, or other disease processes or conditions as possible means of maintaining the tendency. Recurrences after apparent cure must be kept in mind, and treatment continued sufficiently long to prevent them.

Julius Fessler, assistant to Professor Nussbaum, after elaborate research and lengthened experience, asserts that **Ichthyol** distinctly shortens the course of erysipelas. Laboratory experiments show that ichthyol has only a slight effect in preventing the development of staphylococci, but it greatly hinders the multiplication of streptococci. He rubs in energetically for ten minutes at a time a strong ichthyol

ointment and gives ichthyol internally. Any wound must be thoroughly disinfected, and dressed antiseptically.

REFERENCES.—Rothe, "Brit. Journ. of Derm.," Nov., 1890; Charles P. Allen, "Amer. Journ. Med. Sci.," July, 1891; Fessler, quoted in "Lancet," Jan., 1891.

(Vol. 1891, p. 201.) Samter advises subcutaneous injection of ℞ Carbolic Acid 39 parts, Absolute Alcohol 39 parts, Distilled Water 94 parts. Koch uses ℞ Creolin 1 part, Iodoform 4 parts, Lanolin 10 parts, M. To be spread over the part and covered with gutta percha tissue. Hamburger paints **Tincture of Iodine** as a border round spots of erysipelas twice daily. Tison uses Aconitine, gr. $\frac{1}{2}\frac{1}{0}$ every six hours internally, and solution of **Camphor** in Ether locally. ℞ Cretæ Prep., Adipis āā ℥ss, Ammoniæ Sulpho-ichthyolici ℥ij, M. Smear the part twice daily and envelop in cotton wool.

Picric Acid 1½ parts, **Distilled Water** 250 parts, applied externally five or ten times daily (p. 46).

ERYTHEMA MULTIFORME. *T. Colcott Fox, M.B.*

One of the most interesting subjects engaging the attention of dermatologists at the present time is the pathogeny and grouping of the vast collection of cases recorded as "erythemata." Kaposi classes them as *acute exudative dermatoses*, and these he divides into the *acute contagious exudative dermatoses*, represented by measles, scarlatina, and smallpox, and the *acute non-contagious inflammatory dermatoses*. The latter group is characterized by the fact that the inflammatory trouble commences by a particular trouble of vascular tonicity and congestion, that one should consider as a vaso-motor trouble, an angioneurosis (Eulenburg and Landois). Kaposi sub-divides this non-contagious group into three: Firstly, one containing the typical erythematous forms, idiopathic and toxic, and also urticaria; secondly, the varieties of herpes; and thirdly, the forms of dermatitis due to burns, cold, erysipelas, etc. This first group of typical erythemata, idiopathic and toxic, is the one to which we wish to direct attention. Hebra's conception of erythema multiforme does not include all the affections we to-day range in the class of erythemata. One of the most interesting points for the practitioner is that these erythemata can more or less closely simulate the "eruptive fevers" in the objective lesions, in the febrile process, in the occasional implication of the mucous membranes. Besnier has collected the so-called *pseudo-exanthems*, which more or less closely simulate the true eruptive pyrexias, and grouped them into two classes: Firstly, *Rubeoloias and Scarlatinoids*, or those which simulate the erythematous eruptive fevers throughout their course, and which consequently are regularly febrile and acute; secondly, the *Scarlatiniform Erythemata*, a very important and still badly known series of erythrodermias, which are

pyretoid, especially at their commencement, subacute, and more often prolonged beyond the extreme limits of the eruptive period of the exanthematic fevers. The Rubeoloids and Scarlatinoids are sometimes very difficult to distinguish from a typical measles and German measles and scarlet fever. The Scarlatinoids are much the most frequently met with, and arise from an infectious malady, usually pyretic, either primary or due to a secondary autotoxæmia, or a medicinal or alimentary toxæmia, of which examples are found in infectious puerperism, surgical septicæmia, gonohæmia, etc. The Scarlatiniform Erythemata, as distinguished from the Scarlatinoids, have been described under various names as *recurrent scarlatiniform desquamative erythema*, *exfoliating erythematous dermatitis*, and so on.

The etiology of the characteristic eruptions known as erythema multiforme has also come in for much attention, and it is of great practical importance to recognize the lines on which advance is being made. The relations of "rheumatism" with erythema multiforme has long been a vexed question. To-day it is held that "rheumatism" has only a limited etiological action, and indeed our conception of rheumatism itself is undergoing reorganization, and it is probable that under that term a number of different maladies, with symptoms in common, have been included. True rheumatism, says Besnier, does not include erythema multiforme amongst its special manifestations, though this eruption can be induced by it *as by any other infectious condition*. Thus it is important to recognize the fact that this angioneuritic eruption can be associated with such maladies as cholera, blenorrhagia, enteric fever, puerperism, infectious endocarditis and osteomyelitis, lymphatism (?), syphilis, leprosy, vaccination, etc.

REFERENCES.—Kaposi's "Lectures," second French ed., by Besnier and Doyon, 1891 ; Ohmann-Dumesnil, "Jour. of Cut. and Gen. Urin. Dis.," Aug., 1890 ; Stirling, "Austral. Med. Gaz.," April, 1891.

Synopsis.—(Vol. 1891, p. 46.) **Picric Acid** 1½ parts, **Distilled Water** 250 parts, applied externally five or ten times daily.

ERYTHRASMA. *T. Colcott Fox, M.B.*

This is a not uncommon parasitic affection of the skin, which is as yet unknown to the majority of practitioners, and generally confounded with eczema, intertrigo, or ringworm of intertrigo regions. Its clinical characters are usually recognizable by the expert, but the fungus, though abundant, is only to be found by proper staining and the use of an immersion lens. Its site of election is the scroto-crural and next the axillary regions. It occurs mostly in adult men, and has a very slow evolution. The lesions are round, orange-red, brownish, or tawny macules, not margined, uniform in tint and surface, with a very

delicate scaling. The macules are 2 to 4 centimètres in diameter upwards. The proper treatment, according to Besnier, is to promote exfoliation by painting on iodine or the use of resorcin, salicylic, pyrogallic, chrysophanic acids, in strength adjusted to the particular circumstances.

De Michele cultivated two organisms that were present, viz., the *leptothrix epidermidis*, which is to be found apart from erythrasma in various parts of the skin, and a second fungus, not yet described, which alone deserves the name *microsporon minutissimum*. He produced erythrasma by inoculation of the latter fungus.

REFERENCES.—Kaposi's "Lectures," second French ed., 1891 ; De Michele, "Giorn. Internat. del. Sci. Med.," Nov. 15, 1890.

ERYTHRO-MELALGIA.

Synopsis.—(Vol. 1890, p. 258.) Local subcutaneous injection of **Morphia** and **Atropia**.

EXOPHTHALMIC GOÎTRE. *P. Watson Williams, M.D., Lond.*

We have referred to the question of partial or complete extirpation for parenchymatous and cystic goître (which see), but the operation has also found some advocates in the distinct affection under discussion.

Dr. Lencke[1], of Hamburg, claims that as the treatment of this condition by medicine is remarkable for nothing so much as its inefficacy, if the surgeon can offer even a chance of relief his interference is justifiable, and he relates two cases in which surgical interference seems to have had the best results. The first patient was a lad of seventeen, who had the classical symptoms of the disease. The symptoms rapidly vanished, the exophthalmos disappearing, and the heart becoming quiet and regular in action. The improvement was maintained until the time at which the paper was written. Operation was undertaken in the second case, which had long been under observation, because of the good result in the first. The improvement was also very marked, and the patient four months ago was able to resume his occupation. It is yet too early to estimate the full value of the procedure adopted, as regards cure of the disease ; but if relief can be afforded in other cases as great as was apparently obtained in those just related, a strong case will have been made out for the surgical treatment of this distressing malady.

Dr. J. Leonard Corning[2], adopts the following line of treatment. In order to prevent the excessive blood pressure in the thyroid, cranial cavity, and orbit, he places the patient in a warm bath for three quarters of an hour every day ; and sometimes, in addition, he applies

elastic straps round the legs so as to interfere with the circulation in the veins, but not so tight as to arrest that in the arteries. By these means he hopes to secure a considerable amount of derivative action, and lessen the blood supply to the thyroid. He also applies styptic collodion to the skin over the thyroid, and fits it with a carefully adjusted elastic truss. He makes daily applications of galvanism to the thyroid gland, employing for this purpose an electrode of potter's clay moistened with iodine, of sufficient size to envelop the whole gland. The negative pole, a flat sponge, is applied to the nape of the neck. The applications are made twice daily, for periods varying from ten to twenty-five minutes; and are continued for six weeks or two months at least. When the pulse is very rapid he gives aconitine; when not so rapid, digitalis, spartein, or strophanthus. The diet is very important, and should consist largely of milk, of which the patient may take from 2 to 4 quarts a day. Bread and butter, poultry and game may be allowed in moderation. Alcohol in all its forms is contraindicated. Bitter tonics, arsenic, and iron will often be serviceable. Freedom from excitement and mental strain should be ensured, but simple games, musical entertainments, and a moderate amount of reading may be prescribed. The patient should not of necessity be kept in bed.

As regards the electro-therapeutical treatment of Graves' disease, Mr. H. W. Cardew[3] divides cases of Graves' disease into four classes: (1,) Cases that undergo spontaneous recovery, including cases of women who recover during subsequent pregnancy; (2,) Cases that obtain relief from appropriate drug treatment; (3,) Cases that obtain relief or cure from an appropriate electrical treatment; (4,) Cases that derive no benefit from any treatment—and believes himself justified in stating that cases which derive any benefit from an appropriate drug treatment would derive an equal, if not greater, benefit from an appropriate electrical treatment. He recommends the use of galvanism in very weak currents (2 or 3 milliampères), applied for six minutes three times a day, the anode being placed on the nape of the neck, the centre of its lower border corresponding to the seventh cervical spinous process, and held firmly in that position during the application, while the cathode is moved up and down the side of the neck from the mastoid process along the course of the great nerves.

REFERENCES.—[1] "Lancet," Jan. 17, 1891; [2] "New York Med. Journ.," Sept. 13, 1890; [3] "Lancet," July 4 and 11, 1891.

Synopsis.—(Vol. 1890, p. 259.) **Arsenious Acid** in minute doses night and morning, together with half-drachm to drachm doses of **Potassium Bromide** between meals; **Quinine**; iodides of potassium and sodium are

contra-indicated; **Digitalis** is sometimes useful; **Electricity** either by faradisation of the sympathetic or galvanism of præcordial region; **Hydrotherapy**, *e.g.*, sea-bathing, packs, and needle baths are useful, but inadmissible when there is heart or lung lesion; **Strophanthus** tincture in 2-drop doses every six hours, increasing the dose to 10 drops; **Cannabin** (Gastinet's) 4½ grains mixed with sugar of milk, and made into five pills, to be taken in the twenty-four hours; electric baths and the Weir Mitchell diet have been used.

EXTRA-UTERINE GESTATION. *R. Milne Murray, M.A., M.B.*

The literature of this subject has greatly increased in the past year. It consists chiefly of the records of operative procedures for the removal of the sacs at different stages. The opinion seems to be gaining ground on all hands that early operation is the only proper treatment for ectopic gestation. Attempts at checking the progress of the process by destroying the vitality of the fœtus, by electricity or otherwise, are rapidly falling into disrepute. It is becoming more and more clear that the ideal treatment of this untoward condition depends on its early recognition, and removal by abdominal section. The difficulty in the way of carrying this into effect arises from the acknowledged want of accurate grounds on which to base the diagnosis previous to the occurrence of rupture. There can be no doubt that the supervention of this accident after the process has advanced so far, not only seriously imperils the life of the mother, but also greatly complicates the operation at the time, and makes recovery more difficult. It is a matter for congratulation that the record of the year's work contains several cases in which a successful diagnosis was made before rupture had occurred, and removal effected by laparotomy with perfect success. In the face of these facts it is satisfactory to think that the time is at hand when the early recognition of this condition in the hands of the general practitioner will enable its unfortunate subjects to secure the benefit of the removal of this grave danger under ideal conditions at the hands of the specialist. Up to the present time the great majority of the cases recorded come into the hands of the operator at a period either immediately subsequent to rupture or at a time so near the inevitable occurrence of that event that there is no opportunity to take advantage of one of the most important points in the diagnosis, namely, the regular growth of the tumour. It seems practically certain that the coincident symptoms associated with this condition, even as early as the eighth week, including as they do most of the minor symptoms of early pregnancy, some of them in an exaggerated form, along with the almost universal occurrence of more or less acute local pain, should be sufficient to draw the attention of the regular attendant to some untoward condi-

tion. With a patient thus brought under observation it seems highly probable that the condition would be recognized in almost every case sufficiently early and with sufficient accuracy to justify the performance of abdominal section for its removal long before rupture is likely to occur. It, then, seems not unlikely that ere long it will be necessary for Lawson Tait, who has done so much already towards the elucidation of this subject, to reconsider and modify the opinion expressed by him to the following effect: "Any man who gives an opinion that he diagnosed a tubal pregnancy merely upon the unaided discrimination of symptoms or the dim light of a pelvic examination, I regard with so much suspicion that I do not accept his evidence for argument save under exceptional circumstances."

The most interesting paper of the year is contributed by J. Halliday Croom, in the "Transactions of the Edin. Obstet. Society," vol. xvi. After referring to the difference of opinion as to the possibility of diagnosing extra-uterine pregnancy in the early months, the author arranges the various signs and symptoms of early extra-uterine gestation as follows: (*a*,) The general and reflex symptoms of pregnancy, especially if the pregnancy has occurred after a considerable period of sterility; (*b*,) Disordered menstruation, especially metrorrhagia, coincident with symptoms of pregnancy; gushes of blood, accompanied with severe pelvic pain; (*c*,) Severe pain in the pelvis; attacks of pelvic pain, followed by tenderness in either iliac region, and other symptoms of pelvic inflammation; (*d*,) The existence of a tumour; this tumour presenting the characteristics of a tense cyst, sensitive to the touch, actively pulsating; steady and rapid growth of the tumour; (*e*,) The os uteri patulous, the uterus displaced and empty; (*f*,) Paroxysms of severe and spasmodic pain in the pelvis, with general symptoms of collapse; (*g*,) The expulsion of the decidua in whole or in part.

The author then details the history of four cases in wnich abdominal section was performed, in all of which the idea, more or less defined, was present in his mind that extra-uterine gestation was the cause of the condition demanding interference. In the first case rupture had occurred previous to operation; indeed, the patient had not been seen by Croom until the pelvis was filled with blood, and the diagnosis was little more than a surmise. No evidence was found during the operation which would justify the diagnosis, and the symptoms present might quite as well have been accounted for by the tearing of a vascularized adhesion. In the second case the patient was under observation within six weeks of the development of symptoms. She was admitted suffering from symptoms of hæmorrhages following two

months menstrual suppression. Spasmodic pain on the right side was marked. A distinct fulness could be felt on the right side, elastic and tender. On auscultation a marked bruit could be heard, and *per vaginam* the uterus was pushed over to the left side, somewhat enlarged, and the os was patulous. In the right vaginal roof a soft, pulsating, tender mass could be felt, which, bi-manually, was about the size of a cocoa-nut. In a week after admission, during which time the symptoms detailed persisted, the tumour seemed distinctly to have enlarged. No shreds of decidua, however, escaped, nor could any history of such having been passed be obtained. It would thus seem in this case that practically all the symptoms detailed in the list given above were present, with the exception of the discharge of the decidua, and on these grounds the abdomen was opened. A large dark mass was found lying on the right side of the pelvis ; it was soft, and fixed in every direction. The adhesions were separated and the mass drawn to the surface, where it gave way before the ligature could be applied ; a quantity of blood escaped into the abdomen ; the sac was ligatured and removed. No trace of pregnancy could be found in the sac, which was carefully examined by Dr. Sims Woodhead. The tumour was found to be a huge distension of the tube with blood (hæmato-salpinx). The author remarks : "It seems to me that the only point in the case which failed to substantiate extra-uterine pregnancy was the absence of decidua. Every other symptom was present. Of course this may have been an early extra-uterine pregnancy, in which the ovum had been absorbed ; but there was no trace either of chorion or decidua."

The next two cases are of more than ordinary interest. The patients were under observation from the first occurrence of symptoms. Menstrual cessation, irregular discharge, local pains, increasing in intensity, the gradual growth of a tumour occupying the position of the tube, and lastly the discharge of the decidua, were all present, pointing directly to an extra-uterine pregnancy. In the first of these cases the operation was performed at the eighth week after menstrual cessation ; in the second at the twelfth week. Both patients made an excellent recovery.

Such cases as these put the whole question in relation to the diagnosis and management of early extra-uterine gestation on a much more satisfactory platform than it has hitherto occupied. They go a long way to confirm the opinion previously advanced by Barnes and Aveling that the diagnosis of early tubal pregnancy is comparatively easy. The basis of diagnosis may perhaps be fairly stated as follows : (1,) Menstrual cessation, followed by irregular hæmorrhages of vary-

ing amount ; (2,) The presence of minor signs of pregnancy, *e.g.*, sickness, milk in the breasts, etc.; (3,) Local pelvic discomfort, passing into pain of a spasmodic or paroxysmal character ; (4,) On vaginal examination the presence of a softened, patulous os, and a soft, enlarged uterus, the enlargement being probably less than that corresponding to the supposed period of pregnancy ; (5,) The presence of a tense, elastic, tender tumour, placed laterally to the uterus, showing signs, on subsequent examination, of regular growth ; (6,) The discharge of the decidual membrane, in whole or in part.

It is quite obvious that the certainty of the diagnosis, in great measure, depends upon the period at which the patient comes under observation, and it will thus rest mainly on the general practitioner. It is, then, of the highest importance that attention should be drawn to the significance of the earlier symptoms, and that the practitioner who is brought into most frequent contact with the patient should fully realize his responsibilities in this matter.

A. Martin[1] described before the Gesellschaft für Geburt. und Gynak. zu Berlin a successful case of removal of an extra-uterine gestation at the third month, before rupture.

The records of the past year contain many cases in which tubal pregnancy was successfully treated after rupture by Leopold, Martin, Zweifel, Voight, Stratz, Braun, Chroback, Veit, Polaillon, Negri, etc. From the success which has attended a large number of the cases operated on, the advisability of immediate interference in all cases when rupture has occurred is becoming more and more established. Still, each case must be judged on its own merits, and the effect upon the patient and the urgency of the symptoms must determine the expediency of immediate operation.

Before leaving the subject, attention may be drawn to an interesting and thoughtful paper by Charles A. L. Reed, of Cincinnati, in the "American Journal of Obstetrics," February, 1891, on "The Indications for Operation in Ectopic Pregnancy," in which he discusses, first the diagnosis, and afterwards the treatment, of extra-uterine gestation. As regards the first, he says : "With regard to the diagnostic importance of the endometrial decidua, I fancy that none will dispute its conclusions, but many will urge that its existence cannot be safely determined. On this point I beg to urge that I believe that my method of examination is as free from danger as it is simple ; and it is a method to which I always resort, for I never accept the statements of patients on this point. I permit an Emmet curette forceps to simply gravitate through the generally patulous cervix ; if obstruction is encountered, no force is employed, but the instrument is at once with-

drawn ; if no obstruction is encountered, and the forceps drops into the uterine cavity, a very simple manœuvre only is required to secure the important shreds of decidua."

As to treatment, he sums up his views as follows : (1,) That the only proper treatment of ectopic gestation is that by abdominal section ; (2,) That the operation should be done before rupture, as soon as the condition can be presumptively diagnosed ; (3,) That the operation should be done in all cases as soon as evidences of internal hæmorrhage become apparent, and without waiting for the subsidence of so-called "shock," or delaying to attempt a differential diagnosis between extra- and intraperitoneal hæmorrhage ; (4,) That in cases in which the sixth month has been reached without rupture, pregnancy should be allowed to advance to term before operation, but only under constant supervision ; (5,) That in all cases in which the appendages of the other side present the least evidences of disease, they also should be removed, providing the condition of the patient at the time will justify such extension of the operation.

REFERENCE.—1" Central für Gynak.," No. 1, 1891.

EYE (Diseases of). *William Lang, F.R.C.S.*

Tinted Protectors.—Dr. Eaton having remarked the peculiar symptoms complained of, by patients wearing neutral tinted glasses, was induced to examine the cheaper kinds, and with few exceptions he found them to be irregular cylinders, which gave rise to considerable asthenopia. Even the better made and dearer glasses he frequently found to be weak spherical lenses ; consequently he advises the use of large flat glasses which have all the advantages and none of the disadvantages of the dome-shaped protectors.

Correction of Ametropia.—Dr. Jackson, of Philadelphia, states that the correction of an ametropic eye should be as complete as possible, so as to make it approach emmetropia.

Clinical experience is in favour of this principle, and it is generally carried out in the case of astigmatism, though hypermetropes are generally considered to be unable to wear their full correction. This is true if the strongest glass that gives the best vision at five or six mètres is given, as it over corrects for greater distances.

In the case of myopia it is feared that the action of accommodation increases the myopia by augmenting the tension of the globe. This is not the author's opinion, who thinks that the incomplete correction of myopia is more harmful than the hypothetical danger of the exercise of the accommodation ; consequently he orders the full correction even in high myopia.

The present writer holds similar views with the exception of those

cases of myopia where there is a considerable amount of choroiditis ; in such cases he orders the full correction, less four dioptres, for constant use.

Homatropine and Cocaine as a Mydriatic for Refraction purposes.—Dr. C. A. Wood uses a gelatine disc containing $\frac{1}{50}$ of a grain of homatropine and of cocaine to paralyze the accommodation and to dilate the pupil before estimating the error of refraction. The present writer has not found that they possess any advantage over his solution of these drugs in castor oil, which he employs at Moorfields. The thin film of oil on the cornea, mentioned by Dr. Wood as causing an obstruction, is due in the writer's opinion to a too lavish application of the mixture. A small drop of the oil answers perfectly well in every case without producing any blurring effect, and even should a film form it can easily be removed by the patient's winking and wiping the lids.

We are, however, both agreed on the great advantage that the use of homatropine and cocaine, each in the strength of 2 per cent., has over the other mydriatics for the correction of errors of refraction, since it is easily neutralized by a 1 per cent. solution of eserine in castor oil, or even by a watery solution of the same strength, the whole effect passing off within from four to ten hours.

Myopia.—Fukala recommends removal of the lens by discision in myopia of 13D and upwards. As a result the distant vision without glasses is greatly improved, the retinal images are enlarged, binocular vision for near objects is re-established without excessive convergent effort, and without accommodation, both very injurious factors in high myopia.

Epiphora.—This may depend on the condition of the turbinated bones, so Kieselerstal states ; and de Weeker is of opinion that all lachrymal troubles are primarily due to nasal troubles, and looks forward to the time when the nasal specialist will have to treat them.

Lachrymal Fistula.—Venneman recommends the daily introduction of a strip of gauze soaked in **Lactic Acid,** which is secured by an antiseptic bandage, the cure being complete in one to six weeks.

The writer, however, has found that after the nasal duct obstruction has been overcome, simple excision of the whole fistulous tract under an anæsthetic is much quicker even than cauterization by the galvano-wire of the whole length of the fistula.

Lachrymal Affections.—M. Terson in a paper read before the French Ophthalmological Society, reviews the modern treatment of these affections ; but according to the views of the present writer he does not lay enough stress on treating these affections thoroughly at

their very outset. Usually a simple lotion is prescribed with an assurance that nothing much is wrong, and thus valuable time is lost, and often irreparable mischief set up. Putting aside the minor troubles, such as displacement, stricture or occlusion of the punctum and obstruction of the canaliculi, and excluding all causes of excessive secretion of tears, let us turn to the commonest cause of all, viz., catarrh of naso-lachrymal passage, which at first may be so slight that three or four washings through, by means of a Meyer's syringe, is usually sufficient to produce a complete and permanent cure. If this period be allowed to pass without appropriate treatment, the mucous membrane lining the sac becomes thickened and folded, and forms a sufficiently complete obstruction not only to the now excessive secretion, but also to the powerful stream issuing from the syringe or even to the scar producing probe. At this stage treatment must be continuous, frequent and prolonged, but need not be painful, and should consist in the repeated syringing or irrigation of the passage with various antiseptic and astringent lotions. My usual plan in both these stages is to place a few drops of **Cocaine** in the conjunctival sac, then to pass the fine nozzle of the syringe into the sac and inject a 2 per cent. solution of cocaine, if possible, into the nose, whilst the patient's face is directed somewhat downwards to avoid the running backwards of the cocaine into the pharynx.

If the solution passes through freely the case is likely to do well, as probes will not be required, and in future it will only be necessary to use either **Zinc** (2 grs. to the oz.), **Alum** (4 grs. to the oz.), or **Perchloride of Mercury** (1 in 2,000) lotions, two or three times a week.

In the third stage the swollen and congested mucous membrane has softened and stretched, together with the sac wall, under the pressure of the retained secretion, and therefore a complete cure can no longer be expected until the distended sac has been reduced to its normal size. To accomplish this the surgeon's first care is to restore the secretion of the sac to normal clear mucus, and if there is no obstruction to the passage of the fluid, the patient is directed to repeatedly empty the sac of its contents, by pressing on it, every half-hour or hour, so that it may never become distended. In the course of months the swelling may subside and a cure be effected. If however an obstruction complete or incomplete already exists, a complete cure is never likely to be effected, and even if probes can be passed without much difficulty, the three courses then open to the surgeon are—either to teach the patient to wash out his own sac every night, or to pass a style for himself at night to be removed in the morning (or a continuation of these two), or, thirdly, to excise the bulged front wall of the

sac. Messrs. Weiss have made a small syringe for me, which the patient has no difficulty in learning to use, after one or two lessons before a looking glass, the eye being slightly cocained. He is then given a 2 gr. to the oz. solution of sulphate of zinc, and directed to employ it every night. The sac is thereby kept free from muco-pus, and the risks of infecting ulcers avoided. The same treatment holds good in the cases where the fluid regurgitates through the upper punctum, and in which the passage is only kept open by means of a style worn every night. If the sac is greatly distended the shortest course is to open the sac by an incision through the skin and front wall, the latter being dissected as free from its surrounding tissues as possible, before being cut into. The interior is next inspected, and any folds of mucous membrane removed before the front wall is freely cut away, care being taken not to divide the canaliculi. A probe should be passed during the operation from the punctum to the nose, and if everything is free the wound should be well irrigated with mercury lotion and then closed with sutures, and a boric acid ointment compress applied. If possible, rapid union should be obtained by washing out the sac for some days previous to operating so as to get rid of the muco-pus; this object being obtained, the results are likely to be good and the wound heal rapidly. But the patient will have to wash the passage through for some months after to avoid a relapse.

Sycosis.—In blepharitis squamosa, Gradl found 2 to 3 per cent. **Sulphur Ointment** act most favourably. He does not, however, mention that relapses are likely to take place immediately if the patient's refraction is not seen to and any error corrected, and the glasses worn constantly for some months.

Spasmodic Entropium.—In these cases, spastic, senile or from bandaging, Zirm recommends oblique blepharotomy, which consists in dividing one of the eyelids from the outer canthum, by a single oblique cut through its entire thickness.

Entropion.—Pagenstecher has employed the following modification of Hotz's operation in many cases of entropion and trichiasis from granular lids. An incision is made through the skin and muscle of the upper lid along its whole length and opposite the centre of the tarsus. The skin and orbicularis is dissected upwards from the incision so as to expose the tarsus. The lower piece of the skin is now sutured to the upper margin of the tarsus, the needle passing through the skin and coming out through the tendinous expansion of the levator. Care must now be taken to bring the skin margins together to avoid deformity; but the lid is now well everted.

In some cases Hotz combines this with excision of a wedge of cartilage after Snellen's method ; but Pagenstecher finds this superfluous—at the most he only enlarges the palpebral fissure where it is too narrow.

At the St. Mark's Hospital, Dublin, where entropion from granular ids is very common, Benson still prefers the transplantation of mucous membrane from the lip. to any other of the numerous operations for remedying this defect.

The lid is clamped by compress forceps, and the free margin split from end to end by an incision which is carried up through the tarsus into the subcutaneous tissue. The greatest care must be exercised in removing any hair bulbs which may have been left in the posterior flap. The lip is now everted and clamped in a similar manner, and a strip of mucous membrane from 3 to 6 mm. broad, varying with the defect to be remedied, and as long as the tarsal wound, is dissected out with scissors, after being outlined by the knife. The excised piece is freed from submucous fat and areolar tissue whilst spread on the operator's finger. A fine waxed suture, with a knot in it to draw the tip of the flap into the end of the incision, is passed through each extremity, and the margins of the flap are also secured by five or six sutures to the lips of the lid wound. The clamp is now released, and the hæmorrhage mitigated by slight pressure, and when it has ceased the wound dressed with iodoform ointment on lint, and a pad of wool and bandage applied. It is dressed at night and morning for three days, when the sutures are removed and the bandage left off.

No other operation, Dr. Benson remarks, has ever given us at all the same perfection and permanence of result as we have obtained by the blepharocheiloplastic operation.

A New Operation for Congenital Ptosis.—Dr. Gillet de Grandmont has devised the following operation, which gives excellent results where the levator palpebræ is not completely paralyzed. In unilateral ptosis it is advisable to measure the amount of drooping of the affected lid whilst the patient is looking straight forwards, so that the effect may be regulated by the removal of a like quantity of tissue.

The lid is secured in a clamp, a horizontal incision made through the skin and muscle over the centre of the tarsus, and dissected upwards till the upper border of the tarsus is exposed. Two curved incisions are now made through the tarsus and conjunctiva, which include a piece of tarsus two centimètres long and as many millimètres broad as the lid previously drooped. The gap in the tarsus is now stitched together by catgut sutures, which need not be removed, and the incision in the skin may be left to heal by itself. The resulting

scar will be hidden in the fold of the lid. The present writer saw two of M. Gillet de Grandmont's cases, and the results were admirable.

Follicular Conjunctivitis.—Rosmini has obtained very good results in these cases by irrigating the conjunctival sac for about one minute with a sublimate solution of 1 part in 1000.

The Galvano-Cautery in Purulent Ophthalmia.—Abadie records cases of gonorrhœal ophthalmia in which he has saved the eyes, after extensive corneal ulceration had been set up, by the repeated use of the **Galvano-cautery,** together with the application of a 2 per cent. solution of **Nitrate of Silver** and **Eserine** drops.

The writer can confirm the advantage of this line of treatment when applied to all kinds of ulcers with purulent or muco-purulent discharge.

Granular Lids.—Orlowsky carefully presses out the granulations with the fingers as often as necessary, washes out the conjunctival sac with a **Sublimate Lotion,** 1 in 1500, and then rubs **Iodoform Powder** into the bleeding points. On the following days he touches the lids with a 2 per cent. solution of **Nitrate of Silver,** or a 6 per cent. solution of **Sulphate of Copper** in glycerine. In from four to six weeks the granulations have ceased to appear and the secretion has stopped. The patient is discharged as cured, but is ordered to use yellow ointment, 1 part in 120.

Dr. Scott, of Cairo, has cured most of his cases of granular lids, of which he has a large number to treat, by the daily brushing of the everted lids with a 4 per cent. solution of **Perchloride of Mercury** in glycerine, diluted with water. In addition the patient uses a ¼ per cent. solution thrice a day, and an **Iron Tonic** is given internally. The cases were, with few exceptions, treated as out patients, and the cures were complete in from six to eight weeks.

Dr. Scott found the glycerine solution of great use in cases of ophthalmia neonatorum.

Dr. Darier, Professor Abadie's *chef de charge*, has adopted and modified Saltler's method of dealing with granular lids.

After anæsthetising the patient he enlarges the palpebral fissure by the usual cut with scissors at the outer canthus : this step he considers very important, especially where the lids are incurved and the palpebral fissure narrow ; but in all cases it facilitates the complete exposure of the conjunctiva. At the end of the operation the enlargement can be made permanent by applying sutures in the usual manner, if it is thought necessary. The lid, first the lower and afterwards the upper, is now seized by a pair of torsion forceps close to and parallel with the free margin, and rotated on

itself until the whole of the *cul-de-sac* is exposed. A small two-bladed bistoury or other knife is now used to make incisions in the conjunctiva parallel with the lid margin : through each cut the deeply-embedded granulations spring to the surface. When the whole of the conjunctiva has been thoroughly scored it must be brushed over very vigorously with a small hard tooth-brush, dipped into a sublimate solution of 1 in 500, until every trace of a granulation is brushed away. Simple compresses dipped in sublimate lotion are applied for the two following days ; on third and following days the lids are everted and washed with 1 in 500 sublimate lotion, and at the end of a week or fortnight the case is cured. This treatment is only necessary in severe cases.

Bullous Keratitis, which occurs so often after scratches on the cornea by finger nails, etc., can, according to Dr. Biber, recur during seven years. He recommends a prolonged course of massage with yellow ointment to prevent relapses. At the onset of the attack, generally at night, the present writer directs his patients to have a few drops placed on the lids at the inner canthus ; the lids are then to be forcibly opened, and, as soon as the pain has diminished, a piece of yellow ointment is introduced, and vigorous massage performed.

This treatment usually cuts short the attack, but the eye must be protected during the following day by a compress bandage.

Corneal Ulcers.—Dr. Mendosa employs **Pure Liquid Carbolic Acid** in infective corneal ulcers, and finds that a single thorough application is usually followed by prompt recovery, giving brilliant results.

Hypopyon Ulcer.—Parisolli summarizes the treatment in these cases as one of disinfection. Where the hypopyon is large, or does not absorb rapidly, or is producing iritic trouble, it should be evacuated by a corneal section made at the most dependent point and the anterior chamber irrigated with warm 2 per cent. **Boric Acid** lotion. Where the ulcer is extensive it should be burnt with the **Galvano-cautery,** and if the anterior chamber is not opened thereby, a paracentesis and irrigation should be at once done.

For medical treatment, where surgical intervention is not indicated, he employs **Eserine Drops, Sublimate Lotions, Constant Hot Compresses,** and **Calomel** internally.

Fluorescein and the Galvano-cautery.—Nieden, whilst praising this drug when used to define the limits of the disease in acute corneal ulcers, draws attention to the fact that it is not enough to cauterize the green-tinted margin of the ulcer, but also any sharply outlined infected areas which may be near the ulcer, and if they are not cauterized the disease progresses. He also finds both stain and

cautery of great service in phlyctenular keratitis, and also in "nail-scratch keratitis," which by its frequently relapsing causes great discomfort to the patient. The cautery applied lightly and at a dull red heat, either in the vesicular stage or after the vesicle has ruptured, procures a permanent cure.

Galvanism in the Treatment of Corneal Opacities.—Alleman applies an electrode consisting of a silver bar 12 mm. long, insulated, except at the ends, by hard rubber, and having a slightly concave distal end 7 mm. in diameter. The other end is connected with a handle by a spiral spring of copper wire, which allows of movements of the eye without undue pressure and injury to the cornea. A galvanometer is essential in the application of electricity to the cocainized cornea, as the electric current is not felt by the patient; and for the proper control of the current it is also necessary to introduce into the current a delicate rheostat. The strength of the current may be adjusted by passing it through the patient's tongue. The cathode is then dipped in mercury and applied to the cornea, the adhering globus of mercury producing perfect contact.

Alleman applies a quarter to a half milliampère current for a minute, gradually increasing to three or four minutes, and also daily increasing the strength to 1 or 1¼ milliampères. In thin-skinned people even this will produce irritation where the anode is applied to the cheek. The limit of strength is to be measured by the amount of irritation produced on eye or cheek, and the length of time of recovery. Usually he applied it every other day.

The Electro-Magnet in Eye Surgery.—Hirschberg warmly advocates the use of the electro-magnet in all cases of penetrating wounds of the globe by chips of iron, even when the presence of the foreign body can only be legitimately suspected. First the wound should be gently probed by the point of the magnet, and if without result, the sclerotic should be incised longitudinally over the suspected position of the foreign body, but always behind the ciliary region.

It has been pointed out by Mr. Treacher Collins, the curator of the Moorfields Eye Hospital, that the foreign body is nearly always found close behind the ciliary region at the lowest point of the eye, at whatever point it may have entered the vitreous.

Consequently, when in doubt, an incision 5 to 6 mm. long should be made between the insertion of the external and inferior recti into the vitreous cavity, the magnet inserted, and the conjunctiva then united over the wound. An anæsthetic should always be given.

The operation should, if possible, be done immediately after the accident, but it can be successful even if performed some weeks after the injury.

The present writer has found that in the case of a piece of iron lodged in the iris or lens it is of great service to displace the fragment and bring it into a convenient position for removal by applying a large and powerful magnet direct to the cocainized cornea ; after one or two minutes, if the fragment is moveable, it can be attracted to the back of the cornea ; the anterior chamber is then opened, a small magnet terminal inserted, and the fragment withdrawn.

Sympathetic Ophthalmia.—Abadie has had good results in three cases in which he injected 2 drops of **Sublimate Solution,** 1 part in 1000, into the injured eye, and 1 drop into the sympathizing eye.

The present writer has recently irrigated the anterior chamber of an acutely inflamed sympathetic eye with favourable results. He used 1 in 2000 **Perchloride Lotion.**

Embolism of Central Retinal Artery.—Dr. Tischer relates another case where the embolism was displaced two hours after its occurrence by prolonged **Massage** of the globe. The block was seen to be displaced first from one main branch and then from the other, the final result being a relatively small ring scotoma.

Chronic Glaucoma.—Dr. von Schweinitz, of Philadelphia, has observed both improvement of visual acuity and field of vision in these cases after the prolonged use of **Eserine** and **Pilocarpine.** He also mentions the temporary benefit of large doses of **Strychnine** on chronic glaucoma, and also the physiological action of excessive doses of chloral in diminishing the intra-ocular tension.

A New Ocular Bandage for Cataract Operations.—Dr. Gifford, of Omaha, recommends a convex cardboard shield, which rests on the nose, forehead, temple, and cheek. The lids are closed by a strip of plaster, whilst the shield is held in position by several turns of bandage. This dressing prevents all pressure on the eye, which might compromise the coaptation of the lips of the wound, at the same time as it protects the organ from external injury. This dressing is also useful in the case of children.

Dr. Proust, who is an advocate of Chisholm's simplified dressing, which consists of a simple strip of plaster to close the lids, after any operation on the globe, does not think that this affords sufficient protection against blows; consequently he uses a metallic shield, made to fit against the nose, forehead, and cheek.

Dr. Bailey attributes improvement of vision in cases of commencing cortical cataract to the hygienic measures adopted with regard to the use of the eyes. In about two-thirds of this class of cases he noted irritative symptoms, such as conjunctivitis, photophobia, lachrymation, slight redness of the optic discs, and aching in the

eyes and head especially on use of the eyes. In fact, Dr. Brailey suggests that cortical cataract often exhibits the characters of an inflammation.

Incipient Cataract.—Dr. Risley draws attention to the fact that many people with commencing lenticular opacities may be greatly benefited both in comfort and vision if their general health and local eye troubles be attended to. He insists on as complete rest as possible from all near work, the use of smoked glasses when exposed to bright light, and the use to the conjunctival sac of mild antiseptic and astringent lotions, together with the moderate use of mydriatics, preferably **Homatropine.** Internally **Iodide of Potassium,** or **Iodide of Iron,** and **Bromide of Potassium,** or **Lithium,** if headaches are a marked symptom. If these were not well borne, the **Chlorides** were substituted, or in many cases were used in alternation with the **Iodides.** As soon as it proved feasible correcting glasses for any error of refraction were ordered for constant use, and also suitable glasses for any *necessary* near work. Where the tension seemed increased he had used weak **Eserine** solutions, and where there was discomfort without tension **Homatropine.**

Cataract in Children.—In a paper entitled, "When shall we Operate for Cataract and Strabismus in Children?" Dr. Charles M. Shields, of Richmond, thought that the earlier the operation for cataract in children was performed the better the result. The present writer would agree with this where the cataract was complete. In lamellar cataracts, however, he considers that no operation should be performed, unless the opacity is very extensive and very dense, until the patient has been taught to read. He recently saw a case where in spite of an apparently very dense opacity the patient read $\frac{6}{12}$ through the cataract, whilst the operated on eye saw $\frac{6}{6}$. Here the operation might reasonably have been deferred, perhaps for many years, and in other cases he has known the appropriate correction of an astigmatism do away with the necessity of a contemplated operation.

In juvenile cataracts where the opacity is complete, the writer has also found that the lens is removed with great ease and completeness through a linear section about five mm. in length, without any preliminary needling.

Irrigation of the Anterior Chamber.—According to Nuel and Cornil, such fluids as distilled water, weak sublimate lotion, etc., must not be used to wash out the anterior chamber, as they immediately destroy the lining endothelium. They found that boric acid lotion and normal saline solution (0·75 per cent.) have no ill effect, and may therefore be used with impunity. They also suggest that eserine

drops for injecting into the anterior chamber should be made with normal saline solution.

Synopsis.—(Vol. 1890, p. 262.) Perchloride of Mercury, 1 in 1000 or 2000 is the best antiseptic in ophthalmic surgery. In rheumatic or gouty affections, especially chronic, Colchicine, gr. $\frac{1}{30}$ to $\frac{1}{10}$, spread over twenty-four hours. In acute rheumatic or gouty conditions, Salicylate of Soda; and in milder cases, Salicylate of Lithia, or a combination of colchicine with both salicylates may be used in all cases. Tincture of Colchicum in gouty scleratitis and episcleritis. Injections of Pilocarpine in albuminuric retinitis in detached retina in young people due to plastic choroiditis; when pilocarpine fails, try Strychnine injections combined with Iodide of Potassium internally.

(Vol. 1891, p. 212.) For catarrh of lachrymal sac inject Cocaine solution 2%, with Meyer's syringe, and wash out with Zinc Sulphate Lotion, gr. ii–5j.

FEVERS.

Frank J. Wethered, M.D.

The use of stimulants in fevers[1] has been greatly discussed, but their successful management requires no little tact, experience, and judgment. Doubtless mild cases may do very well on milk and broths, without a particle of alcohol from the beginning to the end of the fever. Some, as Jaccoud, give wine or other alcoholic potions indiscriminately to all their typhoid patients, the quantity varying as to age, constitution, and habits of the patient. Others wait for symptoms of general depression and heart-failure. The part of wisdom would seem to be, neither to give alcoholic stimulants altogether as a matter of routine, for some fever patients do not need them, and really do better without them, nor to wait for marked manifestations of depression before giving wine or brandy.

Stokes laid some importance upon what he termed the "Anticipative treatment," by which is to be understood the administration of stimulants at an early stage of the fever, when, "although there may be no very pressing vital symptoms calling for their use, the sagacity of the physician enables him to foretell the occurrence of great prostration of vital energy."

Stimulants are given to guard against a sudden sinking of the vital energy, shown by special conditions of the nervous and the circulatory systems. In determining on the employment of the anticipative treatment, the epidemic character or habit of the disease must be taken into account. If, for example, it is known that in the epidemic a great number of cases assume well-marked symptoms of prostration, say on the seventh, eighth, or ninth day, the physician will on the fourth or fifth day anticipate their occurrence by commencing the use of stimulants. The antecedents of the patient, his habits of life, his previous health, etc., will also furnish indications as to the advisability of beginning the anticipative treatment. Stokes has found that in

typhus fever the anticipative treatment is more frequently called for than in typhoid.

In the aged and debilitated, when attacked with pneumonia, typhoid, or any other febrile disease of more than ephemeral duration, the expediency of early beginning a stimulating treatment is everywhere recognized.

Among the "classic" signs indicative of the necessity of stimulants, we have the dry, brown tongue, sordes in the mouth, stupor or subdelirium, coldness of the surface, a peculiar fever odour, often present from the first, feebleness and irregularity of the heart's action. The quick, soft, compressible, wavy pulse calls for alcohol.

One of the best indications for the use of stimulants in fevers is the condition of the heart, and no better rules can be given than those which Stokes himself laid down many years ago. They are as follows: (1,) Early subsidence of the first sound, observed over the left ventricle; (2,) Diminution of the first sound over the right ventricle; (3.) The heart acting with a single, and that the second, sound; (4.) Both sounds being audible, but their relative intensity being changed, so as to represent the action of the heart of a fœtus *in utero*; (5,) With these signs, a progressive diminution of impulse, which occasionally becomes imperceptible, even when the patient lies on the left side.

As to the quantity of alcohol to be administered, everything will depend on the condition and previous habits and idiosyncracies of the patient. An adult male patient, about the fifteenth day (or about the time of crisis) of typhoid fever, with nervous and circulatory symptoms, indicating a tendency to sinking, will often bear enormous quantities of alcohol, and it is not an uncommon event for patients in this condition to be dosed to the extent of a quart of wine and a quart of brandy in the twenty-four hours.

The treatment of febrile affections in children generally presents but little difficulty; but when the temperature becomes very high or is sustained beyond the usual period over 100°, it often becomes a difficult question as to the use of antipyretics. Prof. Demme[2], of Berne, in the "Wiener Medizinische Blätter" for Jan. 1st, 1891, publishes a number of useful rules as to the selection of such antipyretic measures in the treatment of various febrile affections in children.

In the first place, Dr. Demme maintains that he is firmly convinced that, in children, febrile affections, with moderate fever, from 100° to 101° F., are best treated without any antipyretics whatever in the way of therapeutics, and that the febrile symptoms may be best controlled by cloths wet in cold water and wrapped around the trunk.

The baths should be administered twice daily, lasting from five

to ten minutes each, the temperature of the water being from 79° to 82°.

When, however, the temperature reaches 104°, and remains at this elevation, then antipyretics are necessary, although the author shows that there is the greatest choice in the selection of a suitable remedy for this purpose.

As regards the selection of the individual antipyretics, in addition to the general observations already given in every case of acute articular rheumatism, when the condition of the digestive organs permits it, he uses the **Salicylate of Sodium**, or, where there is a tendency to vomiting or diarrhœa, or serious objection to the taste, he substitutes for it **Salol**; and in typhoid fever he has found the greatest satisfaction upon the employment of **Thallin**, administered in the form of a sulphate, giving it every two hours to children from three to four years of age in doses of ⅙ grain; from five to ten years of age, in doses of ⅓ grain; eleven to fifteen years of age, in doses of ½ to ⅞ grain. In cases of broncho-pneumonia, where the temperature may often reach 106°, **Antipyrin** is the remedy which Dr. Demme recommends, giving it dissolved in large quantities of water, with the addition of a little sugar and a few drops of brandy. In this mode of administration he claims that disturbances of the appetite or vomiting will be entirely avoided. He states that this remedy has rarely failed to give him satisfactory results where he has attempted to produce marked reduction of temperature, in cases of broncho-pneumonia, or in the acute exanthemata, or even in malignant diphtheria, and he consequently prefers it to any one of the other antipyretics. Although the author, as seen, gives the preference to antipyrin as an antipyretic, he nevertheless refers to **Acetanilide** [and **Antifebrin** as likewise, in cases of erysipelas and acute rheumatism and pulmonary tuberculosis, satisfactory antipyretics, while antifebrin possesses the advantage over antipyrin in more seldom leading to the production of exanthematous eruption.

References.—[1] "Therapeutic Gazette," Feb. 16, 1891. [2] Ibid., April 15, 1891.

FIBROID TUMOURS (Uterine). *R. Milne Murray, M.A., M.B.*

The discussion regarding the efficiency of electricity in gynæcology, and specially in relation to the treatment, still continues. In this country Lawson Tait leads the opposition with characteristic vigour of statement. In a letter in the "British Medical Journal," November 7th, 1891, he refers to two cases of patients suffering from uterine tumour of long standing who had been treated by electricity, but both of whom had ultimately succumbed. "Were it not," he says, "that

my operating rooms are now being flooded with a collection of cases of failures of the electrical treatment, I would not have re-opened the question ; nor, indeed, would I have considered that enough perhaps to trouble you again were it not that these cases by this treatment are reduced to the very verge of the grave before they come to us by profuse and exaggerated metrorrhagia, but most of all by the process of necrosis which seems to be induced in the tumour by the electrical treatment. Most of them have to be submitted, therefore, to the major operation of hysterectomy, an operation which I have frequently said that I detest. Had they never been subjected to the electrical treatment, removal of the appendages would probably have been sufficient to have cured their disease. During the last four months I have had to perform twelve such hysterectomies, with one fatal result, and it is to me an amazement that the mortality has been so little, seeing the condition of exhaustion and wretchedness in which the patients arrived. It is perfectly clear that there is now setting in a great rush of the electrical failures applying to the surgeon for relief ; and I submit, as I have already done in your columns, that the undue mortality which will necessarily be met with in these cases is not to be credited to the surgical operation, but to the waste of time involved in, and the damage done by, the application of electricity."

Replying to this letter, Aveling[1] says : "My four years' experience of the electrical treatment of uterine tumours is the reverse of Mr. Tait's. I find that in nearly all these cases the patients are cured symptomatically, and that very frequently small tumours are quite removed. Instead of there being "a great rush of electrical failures," as Mr. Tait says, there is ample evidence to show that every day the method of treatment is proving more successful. This must necessarily be the case as operators become more expert in its employment. Properly carried out, the modern treatment of uterine myoma is safe and satisfactory, and is now so thoroughly established that no adverse criticism can stay its beneficent progress."

In the same journal, Sinclair, of Manchester, replying also to Tait's letter, says : "That we have in Apostoli's method a therapeutic agent of much value, which frequently stops the hæmorrhage, relieves the suffering from pressure on bladder or bowels, and improves the general condition of patients, will hardly be denied by any reasonable man who has given it a fair trial. On what evidence he (Mr. Tait) has convinced himself that a process of necrosis in the tumour, or any general damage to health, is inherent in the electrical treatment, I cannot imagine. I have met with many cases of necrosis in fibroid tumours, but never once in a tumour which had been subjected to

Apostoli's treatment. The intra-uterine electrode can be employed in the same bungling fashion as the uterine sound, the dilator, and the curette are so often used, and with similar disastrous results ; but the ignorance and stupidity of the gynæcologist is not a just ground of indictment against a therapeutic agent which is valuable when intelligently applied. We fail in the electrical treatment owing to difficulties inherent in the cases, or want of knowledge, care, and patience ; but worst of all we do not get the chances which we ought to have of treating suitable cases. And why? Chiefly because Mr. Lawson Tait and others deeply committed to surgical methods have raised such a loud, persistent, and confident outcry against the treatment."

Dr. Thomas Keith[2] contributes a paper on "The Treatment of Uterine Tumours by Electricity: Its Effects on Small Tumours." After expressing his convictions in the efficiency of Apostoli's method in dealing with myomata of the uterus, he records the details of seven cases, in five of which tumours, which gave rise to hæmorrhages, pains, and pressure symptoms, entirely disappeared. "In every case," says the author, "small though the tumours were, all the ordinary treatment, however long persevered in, entirely failed to arrest hæmorrhage or to limit growth. What the principle of the process may be that causes the absorption or diminution of the bulk of a uterine fibroid I know not. In these cases it is certainly not electrolysis. I rather think that it must be looked for in some form of electrical osmosis. The removal of the ovaries had been recommended in all these cases, and in some this was pressed upon the patient. No alternative was offered. The very name of Apostoli seemed to act as a red rag upon some. The treatment was invariably condemned as useless, and was generally spoken of as quackery. When the time comes—and come it must—when nine-tenths will be treated at an early stage, treatment will be comparatively easy, and cure will be almost always certain. There may then still be a place for hysterectomy ; there will be little or none for the removal of ovaries ; and gynæcologists will be ashamed to publish long lists of cases where scores of ovaries are acknowledged to have been removed for simple painful menstruation that they could not, or had not tried to cure in other ways."

The author concludes as follows : "This treatment *almost always* relieves pain. It *almost always* brings about diminution of the tumour —sometimes rapidly. It *almost always* stops hæmorrhage—sometimes rapidly. The results are *almost always* permanent, and the growth of the tumour, if it be not lessened, is stopped. The general health is immensely improved. By *almost always* I mean nineteen cases out of every twenty."

In spite of the pessimistic opinions of Mr. Tait as to the value of electricity in gynæcology, and his unqualified denunciation of it, there seems to be the best grounds for believing that its value as a therapeutic agent is becoming more firmly established, while at the same time better defined. Properly applied, in suitable cases, it will relieve pain, cure menorrhagia, check the growth of small tumours, promote absorption of inflammatory deposits, and cure intractable cases of endometritis. No amount of wild assertion on the part of any one will disturb the confidence of those who have had experience of the ordinary results obtained by the electrical treatment of pelvic disease. There are suitable and unsuitable cases, and there are right and wrong methods of procedure, and we may perhaps account for the floods of patients in Mr. Tait's rooms by suggesting that they represent the unsuitable cases and the wrong methods. That these so-called failures of the electrical treatment will steadily diminish and in great measure disappear is becoming less and less a matter for doubt. This result will be secured just as soon as gynæcologists realize the scope and limitations of electrical treatment, and are prepared to train themselves in, and restrict themselves to, the proper methods of application.

During the past year favourable results have been obtained, and are recorded by, the following among others: L. Meyer, Copenhagen; Kjaergaard, Copenhagen; Zweifel, Leipzig; Mendes de Leon, Amsterdam; Richelot, Quenu, and Lucas Championnier, Paris; L. Prochownick, Hamburg; Gautier, Paris; Bäcker, Budapest; Rokitansky, Nagel, Berlin; F. Engelmann, Kreuznach; Aust-Laurence, Bristol, etc.

REFERENCES.—[1] "Brit. Med. Jour.," Nov. 14, 1891; [2] "Brit. Med. Jour.," Feb. 14, 1891.

FLAT-FOOT. (See "Orthopædics.")

FRACTURES. *F. S., Esq., F.R.C.S.*

W. Watson Cheyne[1] advocates cutting down at once in certain cases of fracture extending into joints, with the view of restoring the fragments to their proper position or of removing useless fragments, especially where the fracture is a complex one, or where comminuted fragments are present which cannot be manipulated into position, and which tend to lock the movements of the joint, and interfere permanently with its function. He cites four cases in which he interfered by operation with great benefit to the patients.

The first case was partial fracture of the head of radius. In this the operation was performed two months after the injury on account of

loss of supination, great pain on movement, and very slight range of movement. It consisted in removing about half the head of the radius, which had been chipped off and become wedged between the bones, thus completely locking the joint. On breaking down the adhesions, which were pretty firm, perfect movement of the joint could be obtained. The remaining portion of the head of the radius was left, the wound stitched up, and dressed aseptically.

As regards the after-progress of the case, very little need be said. The wound healed by first intention, and at the present time the movements of the joint are absolutely perfect.

The second case was one of fracture of the neck of the left femur, treated by pegging together the broken fragments. The operation was rendered necessary by infantile paralysis of the right leg and bronchitis, which prevented the supine position being maintained.

The other cases were : Fracture of the olecranon, the coronoid process of the ulna, and the external condyle of the humerus ; dislocation of both bones of the forearm backwards ; and an old-standing dislocation of the patella.

REFERENCE.—1" Brit. Med. Jour.," March 7, 1891.

FURUNCLES OF EAR. (See "Ear.")

FURUNCULOSIS. *T. Colcott Fox, M.B.*

Veiel thus summarizes the points to be aimed at in the treatment : (1,) To destroy the pus cocci by parasiticides before necrosis sets in. This can rarely be done, because it is difficult, if not impossible, to get the remedy to the bottom of the infected glands. Boring into a single furuncle with 3 per cent carbolic acid solution, or nitrate of silver, or the bichloride of mercury paste pencil of Unna, is also painful and uncertain ; (2,) To hasten the separation of the necrosed cone, with its pus cocci. For this nothing is better than the old fashioned poultice, but auto-infection of surrounding glands must be prevented by cleanliness, by brushing the poultice and the skin with a 1 per cent. sublimate solution, or in irritable skins with a 4 per cent. boric solution. During the night boils may be covered with a paste (zinc oxide and vaseline, āā q.s., boric acid, 4 per cent.) spread thickly on lint and bound down with plaster. Only very slowly developing furuncles should be incised, and avoid early squeezing out ; (3,) To prevent auto-infection and formation of new furuncles by cleanliness, the application of abovementioned paste, and, when well borne, of corrosive sublimate baths, and by avoidance of scratching and rubbing ; (4,) To put the constitution in the position of greatest resistance to noxious invasion by pus cocci. Cathartics are useless ; arsenic and calcium sulphide no good.

Citrine Ointment, applied early, will cause a furuncle to abort, it is said.

REFERENCE.—Veiel, "Monats. f. Prakt. Derm.," No. xi., p. 362, 1890.

Synopsis.—(Vol 1890, p. 264.) *Post-eczematous*: To mitigate and avoid this, incorporate Carbolic Acid or Thymol in the ointments used for the eczema; if boils threaten, add a minute quantity of Corrosive Sublimate to Oxide of Zinc Ointment, and give Calcium Sulphide internally.

GASTRIC CATARRH.

Synopsis.—(Vol. 1891, p. 32.) Tincture of Hydrastis.

GASTRIC NEURASTHENIA.

Synopsis.—Vol. 1891, p. 223.) Use of antiseptics, such as Salicylate of Bismuth, β-Naphthol, Salol. Evacuation of toxines by laxatives in constipated subjects, and the use of intestinal lavage with solutions of α-Naphthol, 1 in 1000, if diarrhœa be present. The use of a diet least tending to formation of toxines. Reduction of quantity of fluids taken. Massage, Gymnastics, and Hydro-Therapy.

GASTRIC ULCER. *Frank J. Wethered, M.D.*

Dr. Dreschfeld', in a paper read before the Manchester Medical Society, discussed the diagnosis and treatment of gastric ulcer. In reference to the treatment, he considered that in cases of profuse hæmorrhage, turpentine acted best and most speedily in these cases; no food should be given by the mouth for some days after the hæmorrhage had ceased; the patient should be fed entirely for that period by nutrient enemata or suppositories. For the treatment of gastric ulcer generally, enforced rest in bed for some weeks, the application of very hot poultices to the epigastric region, and a careful and well-regulated diet, which might consist of nitrogenous material, but should contain little or no fat and not much starchy food, was indicated, and should be persisted in for a long time. For the relief of the pain, powdered bismuth, and often nitrate of silver, acted very well; when there was much hyperacidity, large doses of alkalies often gave great relief. Surgical treatment might be indicated in some cases.

REFERENCE.—"Brit. Med. Jour.," Feb. 21, 1891.

GLANDERS.

Synopsis.—(Vol. 1891, p. 223.) Bottinger advises Carbolic Acid and Iodide of Potassium. Gamgee recommends Arsenic combined with Strychnia. Gold's case recovered after prolonged use of Mercurial Inunction.

GLAUCOMA. (See "Eye.")

GOITRE. (See also "Exophthalmic Goître.")

P. Watson Williams, M.D., Lond.

The pathology, diagnosis, and surgical treatment of goître formed the subject of a valuable series of lectures delivered at the Royal College of Surgeons. All goitres may be divided for practical pur-

poses into five classes : (1,) Parenchymatous ; (2,) Cystic ; (2,) Fibro-adenomatous ; (4,) Malignant ; (5,) Exophthalmic. Mixed forms are common, but exophthalmic goître is structurally and clinically apart from all others.

The treatment of parenchymatous and fibroid goître may include removal of the individual from the goîtrous district (if it be an endemic case), blistering, or the administration internally of fluoric acid. Great success has been claimed for the application of biniodide of mercury ointment, but the results in this country have hardly borne out the expectations. In parenchymatous and cystic goîtres, the injection of iodine and of iron solutions has found many advocates. Mr. Berry is in favour of Semon's method of iodine injections, but he shows that fatal results are not uncommon, even where every care is taken. Von Moorhof has recently recommended injections of iodoform dissolved in ether and oil. They appear to be less dangerous than the ordinary iodine ones, and in seventy-nine cases where he used them they were followed by some reduction in the size of the tumour. Treatment by setons is nearly given up, from the risk of wounding veins and from the danger of pyæmia.

Ligature of the thyroid arteries has been revived of late, and both the superior and inferior vessels have been tied at once ; but the latter are difficult to reach, so that the operation is a serious one. The cases most suitable for it are those of parenchymatous enlargement in the early stage. The thyroid isthmus has been divided for the relief of dyspnœa. Sometimes it succeeds by allowing the separation of the two lobes, and at other times by permitting the escape of the colloid secretion ; but Mr. Berry points out that it is insufficient to relieve the cases of most urgent dyspnœa, and often the goître reappears when the wound has healed.

The most important method, after all, of treating parenchymatous goîtres is extirpation. The removal of the whole gland is now almost given up on account of the danger of cachexia strumipriva, and against resection of the isthmus there are the same objections as against division of it. Partial extirpation has been carried to great perfection, and with very satisfactory results.

For cystic goîtres we may employ tapping, with or without drainage or injection. Of late the method of enucleation has been applied to them, and to those solid tumours which have a capsule, and which are either single or only few in number. The advantages are less danger of cachexia, and less risk of wounding the nerves or great vessels. However, there is greater likelihood of recurrence than when part of the gland is excised. Where the tumour is single, embedded in

healthy tissues and easily shelled out, enucleation may be preferred to the more radical operation.

Sir William Stokes[1] has reported seven cases of goître treated surgically, and concludes by saying that, "having regard to these cases, and the remarkable results obtained from ligature and excision of the isthmus, it is a matter worthy of consideration whether this by no means hazardous operation might not be undertaken with a good prospect of success in exophthalmic goître.

"When we consider the exceptional difficulties, dangers, and serious sequelæ that at times attend immediately or occur remotely after thyroidectomy, whether it be complete or partial, such as hæmorrhage, tracheal collapse, injury to the recurrent laryngeal nerve, tremors, convulsions, sudden dyspnœa, shock, septic infiltration, nerve degeneration at a situation remote from the field of operation, myxœdema, and cretinism, it is remarkable that a method of procedure—namely, ligature and excision of the isthmus—that, so far as our experience goes, does not appear to be attended with the same risk, has not merited a greater attention at the hands of surgeons than it has hitherto done. I do not know of any case except those of Mr. Holthouse, who has narrated the particulars of two cases, Mr. Sydney Jones, who has had four, alluded to by Sir William MacCormac in his able surgical address in Belfast in 1884, and my three cases. These are very few, but still the results are distinctly encouraging. Mr. Jacobson, in his excellent work on Operative Surgery, says:—'I would most strongly urge a further trial of this operation in cases of general enlargement of the gland, especially when the isthmus itself is enlarged.'

"Should the experience of surgeons in the future coincide with that which has been already acquired, limited though it be, a very great advance will be acknowledged to have taken place in the treatment of one of the most serious conditions that the operating surgeon may be called upon to deal with."

In confirmation of this opinion we have the recent report of four cases successfully operated on by Dr. Lediard[2], embarrassment of breathing being extreme or imminent, and iodide of potassium having failed. In each case one lobe was notably the larger, and was removed, rapid healing, under antiseptic precautions, and complete relief ensuing.

On the other hand, a case of cystic goître under Bornis[3], of Tubingen, is the largest struma ever operated upon. The tumour was double as thick as the diameter of the trunk, and reached down to the umbilicus. It was removed by extra-capsular extirpation. The

patient was cured in a short time. The tumour was a cyst, weighing ten pounds.

Kapper[4] describes his experience of the value of **Iodoform Injections** in the treatment of cystic goître. The solution used contained 1 part of iodoform to 7 of ether and 7 of olive oil, this liquid being injected with an ordinary hypodermic syringe. The latter is introduced about an inch into the tumour (at several places where the growth is large), 15 to 25 minims being injected at a time. As a rule the injection is repeated every four to six days, but on several occasions daily treatment was resorted to without any unpleasant sequelæ. Kapper employed these injections in fifteen cases, and in every one of them a reduction of from three to four inches in the circumference of the neck took place. The patients throughout were able to continue at their usual avocations. Indeed, amongst one hundred and fifty injections no single untoward result occurred.

Auerbach[5] reports a good result from the parenchymatous injection of aqueous solution of **Osmic Acid** (grs.j ad ʒij), a syringeful being injected once every other day for three weeks.

REFERENCES.—[1]"Medical Press and Circular," July 1, 1891; [2]"Lancet," June 20, 1891; [3]"Journ. Laryng.," Aug., 1891; [4]"Deut. med. Woch.," July 9, 1891; Supplement "Brit. Med. Journ.," Aug. 29, 1891; [5]"Med. Oboz.," No. 3, 1891, p. 307; "Journ. Laryng.," June, 1891.

Synopsis.—(Vol. 1891, p. 224.) Application of **Chromic Acid** to inner wall by means of a probe. **Iodine injections**; **Extirpation.**

GOITRE (Exophthalmic).

Synopsis.—(Vol. 1890, p. 276.) Injections of ethereal solution of Iodoform; **Electrolysis** in cases of soft goître.

(Vol. 1891, p. 228.) **Strophanthus Tincture**, ♏5, thrice daily gradually increased; **Galvanism**; **Cactus Grandiflorus Tincture**, gtt. 3 to 5, every four hours; **Ammonium Carbazotate**, gr. 1, thrice daily in pill form, increasing the dose.

Tincture of Veratrum Viride, gtt. 3, twice daily (p. 53).

GONORRHŒA. *J. Hutchinson, jun., F.R.C.S.*

Little that is new can be noted in the treatment of this disease. The vaunted specific for cancer—**Pyoktanin**, or methyl-violet—has been tried in watery solution as an injection without much benefit, indeed, if used stronger than 1 in 3000 it causes much more irritation than the usual astringent injections.

Dr. Hanika, of Munich, recommends that gonorrhœa be treated by filling the urethra with a powder containing equal parts of **Tannin, Iodoform**, and **Thallin Sulphate.** As this method, if properly carried out, would involve the patient attending once or twice daily, it has

obvious advantages so far as the private practitioner is concerned. It is, however, merely a revival of an old method of treatment which was not found to be of conspicuous merit.

Synopsis.—(Vol. 1891, p. 230.) **Salol**, gr. xx, thrice daily, using an astringent injection also in chronic cases. **Nitrate of Silver**, gr. 48 to ℥j has aborted an attack on the fourth day, but is not free from risk. Malécot advises **Nitrate of Silver**, gr. x to ℥j, to abort the attack; but if too late for this, **Salicylate of Mercury** solution, 1 in 2000. Neisser advises **Nitrate of Silver**, 1 in 4000 or 1 in 2000, used four to six times daily. For chronic urethritis, Sounds covered with ointment containing **Nitrate of Silver**, gr. ij to vj to ℥j, may be used; Astringents may also be required; **Unna's Bougies.** For suppurating bubo, Puncture, let out pus, wash out cavity with **Sublimate Solution**, and then fill it with liquefied **Vaseline** containing **Iodoform.**

Lycopodium, gr. ij to x (p. 38).

GOUT.

Frank J. Wethered, M.D.

In the "Medical Annual" for last year we gave an abstract on the valuable work which had been done during the previous year by Sir William Roberts on the chemistry of gout. The same author[1] has again added to our knowledge on this subject in a paper, read before the "Medical Society of London," of which we proceed to give an abstract.

Of all the phenomena associated with gout, by far the most definite and characteristic is the deposition of the crystalline urates in the joints and elsewhere. The occurrence of such deposits is usually regarded as pathognomonic of the gouty state: but the converse of this proposition is not accepted.

Clinical observers have always recognized the existence of a pathological state to which the names of suppressed, latent, or larval gout have been applied, in which no uratic deposits can be discovered.

Sir William Roberts said that uric acid existed in the body of the gouty in two very different states, namely, in a state of solution in the blood, and precipitated in the solid form in the tissues. To the former of these conditions the term "lithæmia" had been applied, and it was invoked to explain the occurrence of the visceral and neurotic disturbances just mentioned. It would probably be well, in the interest of clear conceptions respecting gout, and as likely to contribute to the promotion of definite lines of further investigation, if we were also to isolate in our minds the latter of these two conditions—the precipitation of the crystalline urates—as a detached and independent pathological occurrence, separate from *all* antecedent and collateral incidents, and erect it into a precisely definable symptom or physical sign, apart from everything else. In doing this, we should only be repeating what had been already done in regard to glycosuria in diabetes, to albuminuria in Bright's disease, and in the separation of

thrombosis from phlebitis. Following these precedents, he ventured to suggest that uratic precipitation should be separated from its associated connections, and that it should be known by the name of "uratosis." Such a name would express clearly and precisely the meaning intended to be conveyed ; it would bring into clearer relief the distinction between uric acid dissolved in the blood and uric acid precipitated as crystalline urate. The exact state of uric acid in lithæmia was not precisely known ; it certainly did not exist in the free state, but whether it were quadrurate, or biurate, or a mixture of the two, or sometimes one and sometimes the other, was not known. On the other hand, in uratosis we knew exactly what we had to deal with, for uratic deposits were always composed of crystalline sodium biurate, and nothing else. Lithæmia was only the exaggeration of a normal condition, but uratosis, even in the minutest degree, was pathological. Further investigation might reveal the fact that the visceral neuroses were not the result of any diffuse lithæmia, but were the consequences of actual uratosis, though microscopic in amount. Experiment had convinced him that in some rare cases of gout the blood might become so laden with uric acid as to be within striking distance of a general uratosis throughout its entire mass. The establishment of the possibility of such a condition would enable us to explain the occurrence of some very obscure incidents in the history of gout.

In concluding his paper, Sir William Roberts said : "Lastly, we should gain something in regard to a clearer apprehension of therapeutical indications. We could, on the one hand, aim at minimizing the incidence of the predisposing cause—be it the gouty diathesis, or lead poisoning, or whatever else might eventually come to be regarded as the most important predisposing factor. Or, on the other hand, failing in that direction, we could aim directly at the uratosis itself. In this latter way we might succeed in preventing the more serious consequences of an irremovable predisposition ; just as in uric acid gravel we are able, by alkalizing the urine, to guard our patient against calculous accidents in circumstances where we cannot remove the causes predisposing thereto. Uratosis is, like gravel, of and for itself a disastrous pathological accident ; and it may induce consequences in the joints or in the kidneys of a permanent character, which far exceed in gravity, and far outlast, the etiological factors which originally gave rise to it."

Sir A. Garrod[2] showed some years ago that during an attack of gout the blood contained appreciable quantities of uric acid. Abeles and Saloman have corroborated these experiments. In the "Deutsche medicinische Wochenschrift," No. 23, of this year (1891), Professor von

Jaksch, of Prague, whose valuable researches on the blood are well known, publishes an interesting paper on the occurrence of uric acid in the vital stream. He considers mainly two points: (1,) Whether uric acid takes a prominent part in the "acid intoxication" described by himself, Peiper, and others; (2,) Whether it is only in attacks of gout that uric acid occurs in the blood.

After numerous experiments Jaksch came to the conclusion that uricacidæmia is not pathognomonic of gout, and he also found that uric acid did not often occur in acid intoxication, but that it might do so.

Dr. Emile Pieffer,[3] in writing to the Lancet and referring to Sir William Roberts' paper of Jan. 4th, 1890, gives a translation of his work on his test for gout.

Dr. Andrew H. Smith,[4] in a lecture on "The Management of Lithæmia," said that it was probable that so long as the uric acid was freely eliminated it might be formed in considerable excess without disturbing the system; but if, for instance, there were an acidity of the blood brought about by an imperfect digestion or assimilation, it would be possible for the acid to be precipitated in any part of the body, thus giving rise to disturbance of function of those parts. Where lithic acid was deposited in the tissues in combination with bases, we had the symptoms familiar to us in gout.

TREATMENT.—Passing on to speak of treatment, Dr. Smith said the great point is to secure a diet which will be readily assimilated, no matter what its composition; for any other diet will inevitably result in the production of various fermentative products, acids, etc., which will derange the metabolic processes more than would result from a little, more or less, of some one constituent in the food. If the food occasions the patient distress soon after its ingestion, it can be assumed that the trouble is in the digestion of the albuminous materials. On the contrary, if the disturbance occurs later,—in other words, if the indigestion be intestinal,—we may say in a general way that the difficulty is with the carbohydrates and the hydrocarbons,—the starches, sugars, and fats. The diet should be regulated tentatively, and then the further management of the case will depend upon which of the two classes the case belongs to. If the patient be plethoric, saline purgatives are valuable. For this purpose a course of **Sulphate of Soda** is very suitable. After this **Nitric Acid** should be administered for a week or two, and then a persistent course of alkalics should be given. **Alkaline Waters** present the alkali in an agreeable form, and they insure the patient's taking a large quantity of fluid, which is necessary in these cases in order to secure a thorough action of the kidneys and

bowels. In this country the most decidedly alkaline is the Saratoga Vichy. Waters containing lithia are especially valuable.

In some peculiarly obstinate cases it might be well to employ the **Iodide of Potassium**, and occasionally **Colchicum** might be useful, but he would not give it in any case where there was irritability of the stomach, and it should be given cautiously. Any kind of treatment which will facilitate digestion will be beneficial in lithæmia,—any one of the recognized digestive agents may prove beneficial.

REFERENCES.—[1] "British Med. Jour.," Nov. 22, 1890; [2] "Lancet," Sept. 27, 1890; [3] "Lancet," Jan. 3, 1891; [4] "Therapeutic Gazette," Aug. 15, 1891.

Synopsis.—(Vol. 1891, p. 235.) **Electrical Endosmosis** for gouty concretion. For gout in the throat soothing **Local Applications, Diluents** and Alkalies internally, and **Hygienic Measures.**

For nocturnal cramps in gouty persons, Tincture of **Cannabis Indica**, ♏ 10, on sugar (p. 18).

GRANULAR LIDS. (See also "Eye.")

GUINEA WORM. *Frank J. Wethered, M.D.*

Surgeon Pisani[1], I.M.S., who has had four years' service in the Punjaub, recommends the following method of treatment for extraction of the guinea worm:—

If the portion of the parasite extruded is not sufficient to wind up, it is picked up with forceps, and a piece of twine six inches long, having a weight at the other end, is attached to it; as soon as the parasite outside is long enough, it should be wound round a slender round piece of ivory about 1¾ inch long, and having a loop of wire hanging from its extremities; to this loop is then attached, by means of a hook, the twine with the weight. The weight should be from 4 to 6 drachms, according to the thickness of the individual parasite we have to deal with; it is only necessary to exert slight extension, and, when possible, this should be effected in the same axis as the parasite enters the body. When the patient has to get up, or at night time, the extruded portion should be wound up to the place of exit without using any force, and the weight is then detached. Not more than two or three inches of the animal should be left unwound, as it is liable to dry and break, and it is always better to keep it moist with water.

REFERENCE.—[1] "Brit. Med. Jour.," Jan. 31, 1891.

HÆMATURIA. *Robert Saundby, M.D., F.R.C.P.*

The relations of *Hæmaturia* to the use of garden rhubarb was the subject of an interesting correspondence in June and July of last year (1891). There was concurrent testimony that in certain individuals hæmaturia follows eating garden rhubarb, though one correspondent

stated this would not occur very early in the season, when the stems are quite young. It was generally attributed to the oxalate of lime present in this vegetable.

Senator[1] has added another to the numerous causes of hæmaturia by recording the case of a young lady who suffered from long-standing, frequently recurring, and profuse hæmaturia, proved by cystoscopic examination to come from the right ureter. There was no pain, and her age discouraged the diagnosis of malignant disease. She belonged to a family of bleeders, and her father and mother were cousins. As a last resource the right kidney was extirpated. The result was most favourable, as two days after the operation the hæmaturia disappeared and did not return. The kidney appeared quite normal. Senator thinks that this case suggests that in some instances hæmophilia is due to a local defect in the walls of the vessels.

Albuminuria.—Macwilliam[2] has recommended the use of salicyl-sulphonic acid, C_6H_3 (OH (SO_3H) COOH, formed by the action of sulphuric anhydride on salicylic acid or by heating salicylic acid with concentrated sulphuric acid. It is soluble in water and alcohol. He recommends the use of a saturated watery solution of the reagent, of which a drop or two should be added to about 20 minims of urine in a small test tube; on adding the reagent the tube should be shaken and examined at once, then heated to differentiate albumose and peptone, which dissolve. He claims that it can detect 1 part of albumen in 100,000 parts of fluid.

REFERENCES.—[1] "Berlin. klin. Woch.," No. 1, 1891; [2] "Brit. Med. Journ.," vol. i., 1891, p. 837.

HÆMOPTYSIS. *F. de Havilland Hall, M.D.*

In enumerating the drugs which have at one time or another been used in the treatment of hæmoptysis Dr. Andrew[1] remarks that the long list affords a very good illustration of the truth of the old axiom, that when many drugs are supposed each to cure one and the same disease, we may safely hold that few, if any of them, have the least influence over it. Dr. Andrew suggested that the conditions of the pulmonary circulation was a subject in which much yet remains to be done by physiology, and from which medicine may hope to derive no little benefit. The not improbable hypothesis that pulmonary vasomotor nerves exist in man, is useful in explaining how it is that drugs acting in various ways may yet succeed in controlling different varieties of pulmonary hæmorrhage.

Dr. Sainsbury[2] very pertinently puts the question: "What are the factors concerned in a bleeding?" On the one hand, the rent in the vessel; on the other hand, the *plus* pressure within the vessel. This

intra-vascular pressure is itself the product of two factors : (1,) The action of the heart ; (2,) The reaction or resistance of the vessels, and this resistance is greatest at the periphery of the arterial tree. If the rent is in an artery of large size the effect of giving **Ergot** or **Digitalis** would be to increase the hæmorrhage, as these drugs check the flow of blood through the arterioles. Any treatment to be of avail in a case of this sort must be one capable of lowering the blood-pressure and accelerating the production of syncope. If, on the other hand, the leakage takes place from the capillaries there is physiological and clinical evidence to the effect that the arterioles may be starved by an excessive action of a drug like ergot or digitalis, and that, therefore, such a drug is indicated in capillary hæmorrhage. Now, place the rent in the arteriole area, and what will **Ergot** or **Digitalis** effect ? The blood pressure will rise, it is true, but the bleeding vessel itself will contract. Whether under these circumstances bleeding will continue or be checked, will depend upon the predominance of blood pressure over contraction of the rent, or *vice versâ*, and this will depend upon whether the rent is situated too near the heart or sufficiently near the capillaries. In the treatment of hæmoptysis the main difficulty is the fact that we cannot look inside and see whether we are dealing with hæmorrhage from a vessel of some size, very possibly from an aneurysmal dilatation, or whether it is a capillary hæmorrhage that we have to check.

REFERENCES.—[1] "Lancet," vol. ii., 1890, p. 857 ; [2] Ibid. p. 962.

Synopsis.—(Vol. 1891, p. 239.) In some arthritic patients astringents are harmful, and the best remedies are **Calomel** and **Salines, Alkalies** and **Iodide of Potassium,** together with **Dieting, Quiet,** the stilling of cough and frequently renewed counter-irritation. **Ice** applied suddenly but not constantly.

HÆMORRHAGE (Post Partum). *A. H. N. Lewers, M.D.*

Dr. Misrachi[1] advises hypodermic injection of **Caffeine** for post partum hæmorrhage. He uses a solution made with benzoate of sodium to dissolve the caffeine. A syringeful of the solution contains 4 grains of caffeine, and three or four such injections are given at once. The caffeine stops the bleeding, and also acts as a stimulant. He considers this method of special use where the practitioner may have been attending infective cases—such as erysipelas—as it may be difficult to produce so satisfactory a disinfection of the hand as to allow of it being safely introduced into the uterus.

REFERENCE.—[1] "Therapeutic Gazette," Oct 15, 1890.

HÆMORRHAGE (Treatment of Internal). *Frank J. Wethered, M.D.*

Dr John Ferguson[1] contributes an interesting paper on the above subject to the "New York Medical Record." His first principle is to

cut off the supply of liquids, so as to diminish the arterial pressure. Another step in the same direction is to reduce the volume of blood by actively eliminating water from the system. The hypodermic injection of **Pilocarpine** rapidly unloads the body of water and inspissates the blood left behind, lessening thereby the freeness of the flow. This would not, however, be suitable in cases of pulmonary bleeding.

Those purgatives that produce copious watery stools, and at the same time are not irritating or depressing, are extremely useful. Of these purgatives there is none so good as **Epsom Salts**—the sulphate of magnesium. When given in saturated solution, without water, in free doses and oft repeated, very free watery evacuations are produced, the amount of fluid in the vascular system is speedily lessened, and the hæmorrhage to this extent controlled.

In some persons hæmorrhage is very difficult to stop; in such conditions, Dr. Ferguson states that he has found the following formula to be highly serviceable: Mix 1 ounce each of absolute alcohol or oil of turpentine in a glass or wedge-wood mortar; to this add very slowly, stirring all the while, 1 ounce of sulphuric acid. After all chemical action is over, the mixture may be bottled; of this, 10 or 15 minims may be used every two, three, or four hours, as needed.

REFERENCE.—"New York Med. Record," Nov. 1, 1890.

HÆMORRHOIDS. *Herbert W. Allingham, F.R.C.S.*

During the past year Dr. W. R. Thomas has published a paper on hæmorrhoids, in which he discusses the question of efficient and prompt medical treatment doing away with the necessity for operative interference. The points on which he lays most stress are careful attention to the action of the bowels, and to the state of the anus, the advantages of increasing in our diet the proportion of vegetable food to meat, the great importance of physical exercise as preventive of constipation, the injuriousness of stimulants to patients who suffer from hæmorrhoids, and the benefits derived from daily injections of lukewarm or cold water.

These suggestions are, no doubt, sensible ones; however, in well formed and prolapsed piles, such treatment is absolutely futile. Temporary relief may be given, but no lasting cure can possibly be effected.

In the last two issues of the "Med. Ann.," reference has been made to the use by Mr. Swinford Edwards and Dr. Andrews, of Chicago, of injections of carbolic acid for selected cases of piles. It may be admissible to remark that such an injection should be advocated only when there is one prolapsed pile, which can be easily

reduced above the sphincters and does not readily come down again. If there are many piles which prolapse and come down again after reduction, this method is dangerous and bad, for the piles may prolapse, swell, and slough, causing great pain, suppuration, and, in some cases, fistula.

The present writer has published a paper on operations on internal piles, derived from his experience in a large number of cases. His main thesis was the inadvisability of treating all forms of piles by any one particular operative measure. For practical purposes piles may be divided into four divisions.

The first group includes those which come down at stool, and those which are almost always in a state of prolapse, and bleed profusely on each action of the bowel. As a result of this patients become anæmic and in ill-health. Hence the operation to be chosen to remove these piles should be one that can be performed as quickly as possible, in order that little blood should be lost at the operation, and that there should be the minimum amount of risk of secondary hæmorrhage.

The second group comprises those piles which may be chiefly regarded as causing inconvenience, for they frequently come down and prevent the patient from taking active exercise. This is the main source of trouble, for these piles rarely bleed, and do not otherwise interfere with the enjoyment of good health. In these cases there is no necessity for urgent haste in operating; the great point is to select the least painful operation.

In the first division the ligature with incision is generally the best to employ, and it can be performed in five minutes. It is excellently suited to piles which are very large and vascular, or are well formed or inclined to be sessile rather than pedunculated. It should be applied for patients who have any tendency to cardiac or kidney disease, and when there is an atheromatous condition of the vessels. It is the wisest to use when the patients are old and feeble; in fact the ligature is the *safest* operation. Nevertheless, it has its drawbacks. The wounds, as a rule, take some time to heal; there is much more pain after the operation and on the first action of the bowels than there is after crushing or simple excision; there is far more sloughing and suppuration until the ligatures have separated, and hence there is greater liability to some contraction.

The second group of cases affords the best field for the *crushing operation* fully described in previous issues of the "Annual." It should be used when the piles are medium-sized and rather pedunculated, and in patients in good health—in fact when the piles are a matter of inconvenience and seldom bleed, and when they are secondary to

some other rectal disease, as fissure, polypus, etc. Its employment is contra-indicated on the occasions when the ligature is most advisable, viz., when the piles are large and vascular, when the patient is distant from medical aid and rapidity of operation is necessary, when previous losses of blood have caused anæmia, and when primary or secondary hæmorrhage might have serious consequences. In fact, in bad cases it is not so safe as the ligature. However, in ordinary cases its advantages are very great. There is freedom from pain after the operation, retention of urine is of rare occurrence, suppuration is unlikely, there is little or no pain on the first action of the bowels, and recovery is usually rapid. After-contraction is not common.

Excision of Piles is one of the oldest operations on record, and in suitable cases the *simple cutting off* of one or more piles is a sensible and satisfactory plan to adopt. It is best applied to one prolapsed pile, to the single perineal pile, so common in women, or to one pile which is complicated with fistula, ulcer, fissure, etc. As a rule, however, whenever a pile is cut off one or two vessels require clipping. It is, therefore, inexpedient to excise many piles, for there may be trouble in picking up the divided arteries.

Nothing favourable is to be said of the use of the *clamp and cautery*. The *cautery* (without the clamp) may be employed in cases of pure capillary piles, when there it no tumour but merely a very vascular localized area. When such an area requires cicatrization to effect a cure, the simple cautery may be very serviceable.

No other modes of operation require further notice than they have received in previous years.

To sum up, the most satisfactory and safest manner of treating the case in hand is the only criterion for the choice of the operation, though, of course, there may be a succession of cases which require the same mode of treatment. Very few cases are *really well* in under three weeks after the operation. The present writer cannot agree with those surgeons who allow their patients to go about in ten days, for such a course is totally contrary to our experience of the treating of the same kind of wounds in other parts of the body, *e.g.*, a wound on the leg, which is delayed in healing by a too early return from rest to the upright position. Doubtless, in many of these presumably rapid cures the wounds in the rectum are not really healed, and in the long run perfect recovery is retarded. A premature resumption of the ordinary ways of life may cause a great tendency to contraction ; or, what is worse, troublesome and tedious ulceration may supervene and take months to heal.

REFERENCE.—W. R. Thomas, "Lancet," Jan. 31, 1891.

Synopsis.—(Vol. 1891, p. 240.) ℞ Chrysarobin 8 parts, Iodoform 3 parts, Ext. Belladonna 6 parts, Vaseline 150 parts, M. Apply three or four times daily after washing the pile with weak **Carbolic** or **Creolin** lotion. For internal piles ℞ Chrysarobin, gr. i; Iodoform, gr. ¼; Ext. Belladonn. gr. ⅛; Cacao Butter, gr. xxx; Glycerine, *q.s.*, Ft. Suppository. **Tannin Suppositories** for hæmorrhage. Injection of pure **Carbolic Acid, Crushing.** Marcy's excision and closure by the buried animal suture.

Casearia Esculenta Syrup, ℥ij (p. 19); **Nux Moschata**, *e.g.*, ℞ Powdered Nutmeg, ℥ij; Ac. Tannic, ℥j; Lard, ℥j, M.; an application for itching and irritable hæmorrhoids (p. 43).

HÆMOSTATICS. *F. S. Eve, F.R.C.S.*

According to Cesari[1], **Antipyrin** more or less speedily arrests hæmorrhage from both large and small blood-vessels when applied in solutions of not less than 40, or, better, 50 per cent. The effect of the application of solutions of the latter degree of concentration is almost equal to that of the finely-powdered drug. Both the solution and the powder should be applied on plugs of cotton-wool. Antipyrin, in short, if placed in contact with blood at its normal temperature, thickens and condenses it, and, without causing coagulation, prevents it from escaping from the vessels. It stops secondary hæmorrhage, and is altogether, according to Cesari, a most valuable hæmostatic.

REFERENCE.—[1] "Brit. Med. Journ.," June 20, 1891.

HAY FEVER.

Synopsis.—(Vol. 1891, p. 242.) **Morphia, Cocaine, Menthol** and **Stramonium** must be used with caution. Best results were obtained by destruction of irritable spots of mucous membrane by **Electro-Cautery** or by **Glycerine of Carbolic Acid.** A solution of **Iodic Hydrarg.**, 1 in 1000, as nasal spray, gave good results. ℞ Fl. Ext. Quebracho, ℥j, ; Fl. Ext. Grindelia Robusta; Fl. Ext. Yerba Santa; Fl. Ext. Myrtuschekan, āā ℥ij, M. Sig. ℥j every fifteen minutes in hot water and brandy. **Peroxide Inhalations.** Spicer's hollow medicated **Nasal Cylinders.**

Euphorbia Pilulifera, Fl. Ext., ♏20 to 60 every four hours (p. 28).

HEADACHE (from Eye-Strain in Children).

Græme M. Hammond, M.D., New York.

Dr. Joseph A. Andrews[1], in an exhaustive paper on this subject, says the symptoms of asthenopia, or eye-strain, consist of irritation of the mucous membrane of the eyelid, of photophobia, and of pain in the eyes and in the head. The headache may be frontal, in the temples, or in both situations, and radiate to the occiput, and be accompanied by a sense of pressure in and about the eyes; further, the letters in a book may become indistinct after a time, and if near work is persisted in the letters may be seen double. The primary cause of this condition is faulty refraction. Quoting the investiga-

tions and researches of many authors, Dr. Andrews demonstrates that myopia commences in the primary classes with a low percentage, and steadily increases as the pupil passes to the highest grades in our public schools, and that the myopic eye presents a greater percentage of disease than eyes with emmetropic or hypermetropic refraction. This percentage is increased if astigmatism is also present. Hypermetropia is the condition of refraction of early infancy and childhood, extending into the first years of school life with slight reduction in its proportion.

Faulty refraction will impose upon the accommodation and external muscles of the globe a task which will be increased in proportion to the demands made by near work, and the distressing symptoms of eye-strain will receive an additional impetus from a feeble organization and a neurotic tendency; therefore we do not meet the requirements of all cases of eye-strain by giving suitable glasses, but we must also address ourselves to the improvement of the general health. The author considers faulty refraction to be at the bottom of the symptoms of eye-strain, and that the attending muscular anomalies have, in his experience, very rarely required correction by prisms in children. Nevertheless it is important to test for insufficiency of the ocular muscles. The guide to the correction of errors in refraction should be the presence of asthenopic symptoms.

Myopia should not be fully corrected.

Hypermetropia should be corrected so that the individual sees clearly and distinctly with his glasses when he is not under the influence of a mydriatic. Any considerable degree of insufficiency of the internal recti at thirty centimètres would contra-indicate the correction of the total hypermetropia, because exclusion of the effort of accommodation would exaggerate the weakness of the internal recti. It would, therefore, be necessary, in such a case, in order to be able to wear the total correcting glass, to produce with it a prismatic correction by decentering the convex spherical lenses.

Astigmatism should be fully corrected.

REFERENCE.—[1] "New York Med. Journ.," July 11, 1891.

Synopsis.—(Vol. 1890, p. 282.) **Caffein** and **Salicylates** in migraine; **Oil of Eucalyptus**, ♏v, four times a day for parxoysmal headache; **Cascara Sagrada** in teaspoonful doses to ward off migraine. ℞ Sp. Ammon. Aromat. ℥ss, Sp. Chloroformi ♏x, Aq. ad ℥j, in toxic headaches from alcohol and tobacco; also **Antipyrin** in 3 grain doses. In more chronic cases, **Digitalis** in small doses; **Nitrite of Amyl** greatly diluted, or better, **Nitro-Glycerine** in acute and recurrent headaches, also in the headache of anæmic girls. In the recurrent forms give alkalies, and if patient be anæmic, **Iron** with an alkaline carbonate. ℞ Sodii Bicarb. gr. x, Ferr. et Ammon. Citrat. gr. v,

Sp. Chloroformi ♏x, Aq. Menth. Viridis ad ℥j, M.; Fiat. haust. ter die ante cibos semihora sumendus. In persons of the uric acid diathesis a mixture containing **Citrate of Potassium**, 20 grs., and **Salicylate of Sodium**, 10 grs., is useful for correction of astigmatism.

(Vol. 1891, p. 243.) **Eucalyptus Oil**, ♏5, four to six times daily in malarial and congestive headaches. Rectification of ophthalmic defects.

Fl. Ext. **Dioscorea Villosa**, gtt. 10, hourly in headache accompanied by biliary colic (p. 25).

HEART (Diseases of). *J. R. Leaming, M.D., New York.*

The Senile Heart.—Dr. Geo. W. Balfour[1] says, "The senile heart is synonymous with the gouty heart." But he certainly does not mean this proposition to be taken literally. They are not synonymous. Senility is merely age, and unless diseases or accidents have crippled or injured some one or more of the vital organs, the whole body grows old together, and death comes at the natural close of existence—euthanasia.

An old heart may be a healthy heart. The word senility has become associated with pathology by a misuse of terms. We say, "Arcus senilis" when we see this pathological evidence in the eye, and we expect to find a corresponding pathological condition of the heart. Man's age is divided into epochs like the seven ages of Shakespeare. The first epoch is infancy and lasts eight years, and is marked at its close by decided changes. The permanent canine teeth make their appearance, and with them comes a corresponding change in the digestion. The true respiratory system begins to develop, and the heart becomes larger, stronger, and the beat slower and firmer.

At sixteen another epoch is closed, and the child becomes a youth arrived at puberty. The heart again becomes stronger and more deliberate in its action. At the close of both these epochs, should there have been injuries received in the meantime by the heart, there may be a readjustment and the disability removed.

At twenty-four adult age is attained, and the heart is strengthened accordingly. At thirty-two the man has arrived at perfection of strength, mentally and physically, and this he should hold through four epochs more, or until he is sixty-four years old, or perhaps until the allotted time—seventy-two.

I have known a member of our profession who, for thirty or forty years feared heart failure from the irregular heart beat caused by indigestion, who died at eighty-six caused by an attack of influenza, but the heart grew stronger by comparison, and was the last great vital organ to give up.

The first two epochs have been carefully watched and measured by auscultatory percussion, and the facts in regard to them have been

ascertained so carefully as to preclude a doubt. It would be an exceedingly interesting and valuable procedure to watch every one of the epochs to learn how much they are, each one, affected, and how. We know that after forty it is not so safe to administer chloroform as it is to a child, although there may be no pathological evidence of degeneration of tissue.

Dr. Balfour says also, "It must be remembered in the first instance that all the affections of the heart found in the old are not necessarily senile in origin." This is an obvious truth. Pathological changes in the heart are due to several causes. Dyscrasias of the blood, gouty, rheumatic, cancerous, tuberculosis, or to injuries or to inflammations. These affect the heart chiefly by impairing its machinery for pumping and distributing the blood in the circulation.

Such pathological changes are of more serious importance to the old heart, which may have lost its power of overcoming and removing disabilities, from degenerative change.

Loss of functions is now added to structural incompetence, and all the tendencies are to a decrease of mechanical facility and dynamic efficiency.

The heart is not alone—all the organs of the body are likewise affected. It is a "general breaking down."

But the heart draws attention to itself so imperatively that the sum of senile incompetence of the body is expressed particularly in the heart. And when the end comes suddenly, it is called "heart failure." An inadequate term for it is brain failure or breath failure, as well as heart failure.

When electricity is stored in an instrument it is intended to last until the electricity is exhausted, and the amount is expressed by the index. When it is exhausted it is not a failure of the index, but of the electricity. Every human being is stored in the beginning with organic life to last to the end of its existence—some more and some less. Disease or accident may exhaust it sooner or bring it to sudden close. In any case the life is exhausted, the machine stops, the heart-beat no longer measures time—time is no more.

When the gaslight in our houses flickers and grows dim we know that there is an impending gas failure. We know also by the feeble hurry of the heart beat that life may suddenly go out.

We endeavour to increase the life force, and we use heart tonics and apparently succeed. But suddenly and without warning the life is exhausted, the machine stops. It is life failure. The watchful physician is as much surprised when it takes place as others, although he knew from the signs that it might take place.

The directions as to exercise and diet which Dr. Balfour gives are excellent, and can scarcely be improved upon.

The tendency to overeat in the aged must be guarded against. Recumbent rest should be had immediately after meals. Then, a short walk or ride on horseback. The horse must be gentle, and the gait a walk. When a heart tonic is necessary, **Digitalis,** as directed by Dr. Balfour, is the best. Dr. Balfour makes no mention of the use of **Mercury,** but in a gouty heart it is of great utility. The immense prejudice against this drug, because its power has been misused, should not prevent us from making proper use of it. Digitalis does better work when employed in conjunction with mercury; as was long ago recognized in the use of diuretic pills, composed of calomel and digitalis mostly.

REFERENCE.—1"Edin. Med. Jour.," Jan., 1891.

HEART (Diseases of). *Frank W. Jackson, M.D., New York.*

Our knowledge of the important subject of *prognosis in structural diseases of the heart* has received a valuable dadition in the very exhaustive paper published by Dr. W. H. Broadbent[1] as the Lumlican Lectures for the past year. He divides his paper into: (*a*,) General consideration of the subject; (*b*,) Hypertrophy; (*c*,) Dilatation; (*d*,) Fatty Degeneration; (*e*,) Angina Pectoris; (*f*,) Valvular Lesions.

Attention is called to the fact that the muscular walls of the heart are liable to changes of various kinds, some of which constitute diseases that shorten life and give rise to much suffering. Of these structural alterations some are extremely common—hypertrophy, dilatation, and fatty degeneration; others rare—cancer, syphilitic gumma, abscess, aneurysm, and localized fibrotic induration. This paper treats only of those which are comparatively frequent; the others, obscure as well as uncommon, are seldom recognized during life.

Even when hypertrophy, dilatation, and degeneration only are taken into consideration we find ourselves on much less secure ground than when dealing with lesions of the valves. The latter we can localize with great confidence, and knowing, partly by experience, partly by the application of mechanical principles, their effects and tendencies, we can, by making out how far such effects are manifest, form an opinion as to the probable course of the symptoms and the future of the patient. In the case of structural changes, on the contrary, we are often left in some degree in the dark even by post-mortem examinations. In one patient, fatty degeneration has apparently proved fatal at so early a stage that the naked-eye characteristics of the condition are scarcely perceptible, and it is only by

the microscope that its existence is definitely established. In another, the change has proceeded so far that the fingers sink into the pale, greasy walls, and the muscular fibres have almost disappeared, so that it is scarcely conceivable how the heart has been able to impress any movement whatever on the blood, or how life has been sustained through the intermediate stages of disintegration. So with regard to dilatation; there is no fixed relation between the degree of enlargement of the cavities and thinning of the walls found after death, and the interference with the circulation observed during life. One man will live for years with a heart which has reached the extreme limits of dilatation, while another succumbs when it is but moderately advanced. If, therefore, we could make out with great exactness the dimensions of the heart, the size of its separate chambers, and the thickness of their respective walls, which is no easy task, we could not, on those grounds alone, compare one case with another and decide upon the relative danger. Many other considerations of extreme importance will come into the estimate: the functional vigour of the muscular walls as well as their thickness, the liability of palpitation, the state of the vessels, the degree of peripheral resistance, the presence or absence of reflex irritation of the heart from gastric or other derangements.

In regard to treatment, Broadbent would do nothing towards affecting the hypertrophy as such; we should think rather of the treatment suggested by the hypertrophy. We recognize the necessity of diminishing the volume and improving the quality of the blood by appropriate diet and hygiene and, if necessary, by tonics. We diminish the resistance to the outward movement of the blood in the arterio-capillary network by diet, aperients, and by eliminants. We may employ nitro-glycerine and the nitrites.

When spoken of as a form of heart disease *dilatation* usually means dilatation of the left ventricle, mostly with, but sometimes without, dilatation of the right cavity. The walls of the cavity may be thickened or they may be thinned. The parietes may have a normal colour, consistence and structure, or they may be pale, flabby, and degenerated, or tough and dense from fibroid substitution. Even more important than the anatomical condition is the physiological, or functional, condition, the special characteristic of which is that the ventricle does not complete its systole, but only expels a portion of its contents. The author believes that this imperfect emptying of the ventricles has not always been fully realized as the special feature of dilatation. If a dilated ventricle launched the whole of its contents into the arterial circulation, the amount being much larger than

normal, the rate of movement of the blood would be greatly accelerated, whereas the contrary is the case. This does not apply to the dilatation of aortic regurgitation, which is simply part of the compensatory arrangement, so that in this case the partial and imperfect emptying of the ventricle is not present. The author thinks it probable, also, that the dilatation of the left ventricle met with in initial regurgitation may have a similar compensatory effect; it would seem to be an advantage, since some of the blood regurgitates into the auricle, that the ventricle should contain sufficient to allow for this and yet discharge a due amount into the aorta. Various conditions give rise to dilatation of the heart. Violent or protracted exertion is attended with temporary dilatation of the heart, which may even give rise to temporary murmurs. The circumstances capable of producing a temporary distension in a sound heart will be competent to give rise to dilatation when it is weak and flabby and other conditions are present which tend to dilatation, therefore Broadbent thinks it more likely that the weakly ventricles give way from time to time under stress, and fail to recover perfectly, than that the yielding is gradual and continuous. He regards habitual high arterial tension as a common and important, if not constant, factor in the production of dilatation. A second factor, less constant perhaps but more important, is inherent weakness in the ventricular walls. Sometimes one will predominate, sometimes the other. With these proximate causes will co-operate varied influences, such as excitement, exertion, table imprudence, and the like. He believes also that acute dilatation of the heart is more common than is generally suspected. He also states that a certain degree of dilatation of the left ventricle usually occurs at the onset of acute renal disease under the combined influence of the resistance in the peripheral circulation and of the enfeeblement of the heart. This may happen also in other acute diseases. Anxiety is regarded as a common cause of dilatation of the heart. It is almost literally true that people die of a broken heart.

The methods of diagnosis of the dilated heart are well known, and need not be reviewed here, with the exception of two points which are of interest. Broadbent states that not uncommonly dilatation of the left ventricle is accompanied by and gives rise to a systolic apex murmur, obviously due to initial incompetence. This is due to the imperfect constriction of the orifice which is part of the normal contraction of the ventricle. Initial valvular disease is attended by precisely the same combination of conditions—incompetence of the valve and dilatation of the ventricle—and of physical signs. The prognosis is very different in the two cases, and it is, therefore,

extremely important to distinguish between them. This cannot be done with any degree of confidence by means of physical signs alone, but it may be said that the presence of the left ventricle first sound in primary dilatation, and its absence in primary valve lesion, will sometimes be of great service as a factor.

Secondly, very important information is often supplied by observing the intervals between the first and second and the second and first sounds. When with dilatation of the left heart there is resistance in the arterioles and capillaries, the interval between the first and second sounds may be so prolonged as to equal the diastolic, or long pause, of the heart, and the sounds thus become equi-distant. The first sound having been shortened, and becoming sharp, the only difference between the two sounds is one of emphasis, or pitch, and it is often difficult to say which is which. When the heart is acting slowly the sounds may be compared to the ticking of a watch, when rapidly, to the puffing of a distant locomotive. On the other hand, the first and second sounds may be approximated, and, since the dilated and enfeebled ventricle cannot complete its systole in a shorter time than normal, the only explanation is that it is brought up short by the resistance of the arterial system and thus expels but a small portion of its contents. This abbreviation of the systolic pause is, therefore, a serious indication of failure of the ventricles.

The treatment consists, in the first place, in the removal of any recognized cause in the habits, mode of life and surroundings, so far as this is practicable ; next to improve the general health by favourable hygienic influences and suitable remedies. The amount of exercise to be taken is a most important question, but no rule can be laid down applicable to all cases. Speaking generally, exercise is good, and the amount that can be done without breathlessness and exhaustion will be safe and beneficial. It is injurious as well as cruel to insist upon an amount of exercise which distresses the patient. Oertel's treatment is, in the main, approved, but the author says "A few patients will be killed" by it.

Therefore the existence of conditions which may lead to the implication of the coronary arteries or their orifices in the morbid processes will warrant a suspicion that cardiac weaknesses, which may be recognized, is the result of degeneration. There may be fatty degeneration with healthy coronary arteries, as in pernicious anæmia, typhoid fever, or phosphorous poisoning. Diabetes, alcoholic excess or a sedentary mode of life may conduce to it, or it may be secondary to myocarditis. Finally, cases are met with for which no explanation can be found.

There is very little that is characteristic in the symptoms. Death is usually sudden. When the course of the disease is sufficiently chronic to permit of the recognition of symptoms, which, in the author's experience, is chiefly when the degeneration is secondary to changes in the coronary arteries, or to old standing hypertrophy, with or without dilatation, they are simply similar to the symptoms of dilatation of the heart, and the distinction in the early stage cannot be made without physical examination. In advanced stages characteristic differences appear. A noteworthy point is that marked dropsy is rare. Syncopal, apoplecti-form, and anginal attacks are the most characteristic latter effects of fatty degeneration. The most constant feature of the pulse is that it is short and unsustained. Such a pulse, however, is common as a constitutional peculiarity, or may at any period of life be simply a result of general debility. In the young there is no danger of such weakness being taken to be indicative of degeneration of the heart, but it may cause anxiety after middle age, especially if there be also irregularity. The distinction is accomplished by making the patient walk briskly. A few steps will often be sufficient. If the heart is sound, the pulse, heart-beat and sounds are all more distinct and strong and regular. If the heart is fatty it "goes to pieces," the pulse becomes irregular, and may even disappear. The physicial signs of the heart are negative. The diagnosis is difficult, but once made the prognosis is of the utmost gravity. In most cases a fatal result is only a question of time and circumstance. If the granular degeneration be due to typhoid fever the patient may recover. If it be due to other forms of blood-poisoning or degeneration, the patient occasionally recovers.

In connection with the subject of fatty heart, it is interesting to note that a case is reported by Lowther[2] of a man, twenty-two years old, apparently robust, who, after a rapid walk of two miles, fell down and died instantly. *Post mortem* revealed marked fatty degeneration of the heart. Fatty heart in one so young is very rare.

Dr. Pye-Smith[3], in discussing the prognosis of valvular disease of the heart, regards aortic regurgitation as the most serious of valvular diseases of the left heart. It is the shortest in duration, the least remediable, and the most liable to sudden death. Aortic stenosis is, on the other hand, the least severe in symptoms, and least dangerous in results, *except* in those cases which occur as a result of chronic atheromatous arteritis with extensive degeneration of the arteries; here the aortic stenosis may lead to sudden and fatal syncope.

It is possible to recover from ulcerative endocarditis, as is shown by a case in the author's experience.

Sir Dyce Duckworth[4] has admirably classified the *functional derangements of the heart* in a recent paper; a short abstract is here given. He divides his subject into: (*a*,) Infrequency; (*b*,) Intermittency; (*c*,) Irregularity; (*d*,) Inordinate frequency; (*e*,) Inordinate vascular pulsation.

Infrequent pulse is not common; sometimes it appears as a constitutional peculiarity, not more than thirty or forty beats occurring in a minute. It may accompany convalescence from acute disease. Malarial poison may produce it. Injuries to the head may cause it. It occurs with acute cerebral diseases, and here it may suddenly give place to extreme frequency or irregularity. Infrequency need not cause anxiety or a grave prognosis.

Intermittency may be habitual and compatible with a full term of life and a heart practically sound. Temporary intermittency is frequently produced by dyspepsia, also by tobacco, loss of sleep, overwork and anxiety. Constant intermittency is mostly seen in middle or advanced life. In the absence of any marked signs of cardiac failure or arterial decay, it is of no serious import. By irregularity we mean irregularity of cardiac rhythm and inequality of tension. The pulse is irregular in force and volume. This is sometimes a temporary condition due to dyspepsia more often than any other cause, especially flatulent dyspepsia. The other causes above mentioned may produce it. Gout may produce intermittence or irregularity, more frequently the latter. Prognosis will depend entirely upon the external soundness of the heart, as it is apt to be associated with organic changes in the walls or valves of the heart.

Inordinate frequency or palpitation, may be either temporary or persistent. The special significance of palpitation, apart from organic disease, varies greatly. Dyspepsia often produces the temporary form. In the persistent form there is often profound nervous disorder. Graves' disease is an example of an accentuated form. It is probable that, under the name of palpitation, several varieties of cardiac disturbance may have to be differentiated. Rheumatism, syphilis, and undue strain seem to figure in the etiology. Paroxysmal varieties have been noticed in connection with chronic rheumatic arthritis and with displaced kidney. Paroxysmal palpitation, without recognizable disease of the heart, occurs in middle life, and about equally in both sexes.

Inordinate vascular pulsation is well recognized as a functional disorder. It is found in the abdominal aorta in conditions of anæmia and after-hæmorrhage from gastric ulcer. It is also seen in dyspepsia and hysteria.

Diagnosis of Cardiac Disease.—In former editions of this work, the reporter[5] has frequently urged the consideration of auscultatory percussion as a method of ascertaining the size of the heart. In order to ascertain with exactness the value of this method he has instituted a series of experiments upon the dead subject and upon the living patient, with what are to him very interesting results. The method of practising auscultatory percussion is very simple, and anyone can quickly acquire the technique. The ordinary binaural stethoscope, with the small chest piece, is held firmly against the integument, over the area of superficial dulness, in such a way as to press firmly upon an intercostal space. Then percussion is made in the usual way from a point beyond the borders of the heart towards the stethoscope. As soon as the border of the heart is reached, the percussion sound at once changes to a sound of much higher pitch and much greater intensity. In this way the borders of the heart can be mapped out, and the exact area of the heart ascertained. This applies to the entire organ, not simply the area of superficial cardiac dulness. The results are much more accurate than those obtained by ordinary percussion, and the area of the heart can be recognized in conditions of the lung, such as emphysema and consolidation, under which ordinary percussion would be unavailable. The experiments upon the dead subject consisted in mapping out the cardiac area, and then introducing long pins through the chest at these points.

The subsequent *post-mortem* examination showed that, in most cases, these pins represented very accurately the borders of the heart. Thus, out of nineteen cases so examined, it was found that in nine cases all the pins either pierced the junction of the heart or pericardium, or some one pin was not more than a quarter of an inch from the heart borders, either within or without. In the other ten cases the margin of error was somewhat greater, but not much greater. A study of the area of the chest occupied by the heart was interesting. In the first place, the shape of the heart as thus traced upon the chest was nearly that of a parallelogram. It is commonly regarded as triangular. Secondly, the left border of the heart was found to lie outside the left nipple, even in the healthy heart. In the books the left nipple line is almost universally regarded as the extreme limit of the healthy heart, when not displaced. Thirdly, the size of the adult normal heart was found to vary within very considerable limits. Similar results were obtained from the examination of one hundred and fifty living hearts.

The conclusions arrived at by the writer are, therefore: (1,) It is a very valuable method of estimating the size of the heart, and is much

superior to ordinary percussion for this purpose ; (2,) It is doubtful if it can be relied upon to delineate less than a quarter of an inch enlargement of the heart, and therefore it is of no value in hypertrophy of the heart without dilatation ; (3,) By its use the heart may be outlined in conditions of the lung, such as emphysema and consolidation, in which ordinary percussion is not available ; (4,) If the left border of the heart is recognized as being outside the *areola* of the left nipple, or better, more than four inches and a half from the midsternal line in a man of medium size, or five inches in a large man, the heart may be considered to be enlarged, especially if the vertical diameter exceeds four inches.

That a presystolic apex murmur is not a positive sign of mitral stenosis is becoming more generally recognized than formerly. Dr. Robert Macguire[6] reports two cases in which, besides double murmurs connected with the aortic valve, there was heard, just inside and above the apex beat, a blowing presystolic murmur, limited to a small area. The autopsies showed thickening and shrinking of the aortic valves, causing marked incompetence, but the mitral valves were normal, except that the anterior flaps were slightly thickened and the ventricular surfaces slightly roughened. He explains this murmur by the theory of the vibration of the mitral valve at the time when the current of blood regurgitating from the aorta meets the opposing current which enters the ventricle from the aorta.

Dr. D. B. Lees[7] also reports four cases in which a presystolic murmur heard during life was proved *post-mortem* to be associated with disease of the aortic valve, the mitral valve being normal.

These six cases, together with nine cases collected by Macguire, make fifteen cases of presystolic murmur without mitral lesion, verified by *post-mortem* examinations.

Leyden states that a presystolic murmur may *very rarely* be of functional origin.

Lenhartz[8], as a result of observations extending over years upon patients who present the pure clinical symptoms of mitral stenosis, believes that even with marked stenosis the compensatory changes render possible an average filling of the left ventricle. This view would explain those obscure cases which we occasionally meet with, in which a distinct presystolic mitral murmur is recognized, without other signs or symptoms of cardiac disease. The reporter has had such a case under observation for more than a year past, in whom neither pulse nor cardiac action has ever been found at fault. Lenhartz has collected a report of ninety-eight autopsies in cases of mitral stenosis. In only seven of these was "concentric atrophy" found ;

in two the left ventricle was comparatively small, in the rest it was either normal, hypertrophied, or dilated.

The subject of *tonsillar* pulsation as a sign of aortic regurgitation is attracting some attention at the present time, F. P. Muller[9] having reported an interesting case of this phenomena in a patient twenty-two years old. His observations have been confirmed by Houchard and others. Matthieu,[10] in a recent thesis on this subject, states that there may be a visible pulse of the isthmus of the pharynx. Exceptionally the pharynx is agitated by the pulsation, to the exclusion of the tonsils and the pillars of the fauces. The symptom is only observed in cases where there is a very energetic cardiac impulse, a considerable volume of the systolic wave, and loss of elasticity of the peripheral arteries. There may be pulsation of the uvula and soft palate. The symptom was found in about 50 per cent of those examined.

Nothnagel[11] has given us some interesting observations upon *Painful Sensation in Heart Disease.* He tabulates four hundred and eighty-three cases of valvular disease observed in six years. He finds that the frequency of the cardiac pain differs very much with the valve affected. It is much more frequent with disease of the aortic orifice than in mitral affections, being met with most often in aortic regurgitation with stenosis of the same valve, most seldom in insufficiency of the mitral orifice. Out of one hundred and fourteen cases of aortic insufficiency, painful sensations were recorded in 68 per cent. On the other hand, out of a total of one hundred and eighty-three cases of mitral regurgitation, only 7⅔ per cent. had these sensations. It is interesting to observe that a combination of aortic and mitral leakage produced these sensations in only 18 per cent.

This result confirms those of other authors, who have generally limited themselves to describing the so-called sterno-cardial (anginose) attacks, with pain usually radiating down the left arm. They associate this sterno-cardial pain only with aortic disease. This Nothnagel confirms generally ; but he gives one case, on account of the rarity of such attacks, where the lesion was a pronounced stenosis of the mitral valve. Nothnagel notes, however, that less definite painful sensations, such as an almost continuous, sticking, tearing, burning, boring pain in the præcordia, or paroxysms of violent pain, together with sudden and severe palpitation, may occur ; or sometimes the feeling is as if the heart would be plucked out. In both these latter cases the pain may radiate into the left side or back. There may be a feeling of a foreign body in the left chest. He also notes that objective alterations of sensation may be frequently present on the skin, not only with sterno-cardial attacks, but likewise in the other forms. The

skin over the præcordia may be more sensitive than that of the right side, or there may be a feeling of "pins and needles," and this may extend to the left side of the thorax and back, close to the vertebral column. Firm pressure against the intercostal spaces in the cardiac region often produces tenderness there, or even actual pain.

Therapeutics.—**Cactus Grandiflorus** is now attracting considerable attention as a new cardiac remedy. Dr. P. Watson Williams[12] has just added a most able paper to other published studies of this drug, in which he gives the proper indications for its use.

[A *résumé* of the author's paper will be found in the "Dictionary of New Remedies," p. 23.—Ed.]

The value of **Strychnine** as a cardiac tonic is becoming more and more generally recognized, and a good deal of the literature of cardiac therapeutics is devoted to this subject.

Professor Bolds Taniboni[13], of Padua, has made a large number of clinical observations upon the use of this drug, and he has grouped the results of his observations in a very clear manner. Strychnine is without question a very efficient excitor of cardiac activity. By its use the systole is strengthened and the diastole is prolonged, while attacks of arythmia are cut short. Subsequently the arterial tension is increased, and the pulse if rapid is slowed, if slow is accelerated. Acute dilatation and the dangers of heart failure, especially of the right side, are removed. Respiration becomes freer and attacks of dyspnœa are completely relieved. Strychnia is only without effect in cases where the nervous and muscular elements of the heart are no longer susceptible of stimulation. Œdema, even when it has resisted digitalis, disappears quickly, and there is free diuresis without the occurrence of albuminuria, such as follows the use of strophanthus. The contractility of the arteries is heightened by the vaso-motor action of the drug. The hypodermic injection of strychnia is well borne, and with careful antisepsis causes no local reaction. Beginning with $\frac{1}{60}$ of a grain, the dose may be increased to $\frac{1}{3}$ of a grain three or four times a day without producing either subjective or objective disturbances. The treatment may be stopped abruptly, even when the largest doses are being given, without causing any unpleasant symptoms. The effect of the salt is seen in about ten minutes after the injection, and lasts for several hours. There is no cumulative action of the drug.

Dr. C. S. Bradfute[14] has given us an admirable paper upon **Digitalis** and **Strychnine** in failing circulation, in which he also warmly advocates the use of strychnine as a circulatory stimulant. He first discusses certain contra-indications to the use of digitalis. Thus, he says, it is contra-indicated in certain constitutional diseases, especially

those characterized by continuous high temperature, accompanied by any of the various forms of degenerative change in the organs and muscular system, and conspicuously when these changes markedly affect the cardiac structure. The action of digitalis upon the muscular fibre is one of stimulation, followed by increase of its force power, and if the muscle is the seat of granular or fatty change it can be readily seen that the indications are for the relief of overwork, and not to compel it to do what it is already physically incapacitated to perform. Therefore, digitalis cannot fail to do harm in typhoid fever. Digitalis slows the heart; therefore, as a rule, a weak and slow heart is not amenable to the curative effect of this drug. Atheroma and fatty heart, especially in the last stages, are affections presenting a pathological anatomy contra-indicating the employment of digitalis. In the first and second stages of pneumonia, when active inflammation is going on, digitalis is out of place, as it only causes the heart to pump more blood into an already surcharged area.

In failing circulation, where digitalis is thus contra-indicated, strychnine is of great value. In protracted diseases especially, in which failing circulation arises, this condition is not due so much to the disease *per se* as vitiated anatomical structures and physiological functions, and the indications for treatment are plain. The prime object to be desired is the restoration of the function of the spinal cord, reflex centres, and nerve endings. The drug that will do this causes a cessation of destruction of tissue, restores vaso-motor tonus, and obliterates the superabundant vascular space; hence a larger amount of blood passes through the heart at each cardiac cycle, stimulating its action and promoting its nutrition.

The failing circulation of diphtheria is a typical one for the exhibition of strychnine, for in this affection, in the severer forms, we have all the conditions present to which its action is antagonistic. The author has had remarkable results also from the use of strychnia in collapse.

A $\frac{1}{60}$ of a grain of the sulphate may be given hypodermically every two hours, or oftener, until there is the desired response. He states that 4 grains in twenty-four hours have not produced toxic symptoms.

W. A. Hammond[15] also speaks highly of the benefit to be derived from strychnia in the treatment of the weak heart due to weakness of muscular structure and to defective innervation. He is sure that he has frequently given tone to weak hearts when digitalis has failed to produce permanently beneficial results.

For the same purpose Hammond also recommends **Cocaine.** Its influence is markedly shown in the ability which it gives the patient

to take increased exercise without suffering from dyspnœa or inordinate cardiac action. He gives $\frac{1}{6}$ of a grain three times a day, and gradually increases this in the course of a month up to one grain, though this increase is not always necessary.

Sée[16] has analyzed an interesting paper by Drs. Rumms and Ferranini, in which the authors show that when cardiac insufficiency is recognized the following questions should be asked: (1,) If the insufficiency is due to an irreparable destruction of the myocardium? (2,) If it is due to degeneration of its fibres? (3,) Whether it is simply the result of temporary enfeeblement, and independent of all degeneration? From these points of view the authors have endeavoured through experimental studies to determine which of the cardiac remedies have a special action on the vessels, which on the heart muscle, and which on the nervous system of the heart. If, for example, in a case of aortic stenosis one should prescribe a remedy which contracts the peripheral blood vessels, the result would still further conflict with the action of the heart.

The authors show that certain remedies, especially caffeine and sparteine, particularly influence the enervation of the heart. Heleborin, and particularly strophanthin, produce a stimulating action on the myocardium, while they are without influence on the nervous system of the heart; nerium oleander, digitalin, erethrophleine, act principally on the myocardium, while they are without influence on the nervous system; while cocaine and convallaria act principally on the myocardium. Therefore the authors conclude that in cardiac cases where there is loss of power in the heart, caffeine and sparteine (strychnine is not mentioned) should be prescribed. When there is feebleness of the heart from aortic stenosis and from insufficiency, or whenever the resistance is situated in the systemic circulation, strophanthin should be used; while in mitral stenosis, or where there is obstruction to the pulmonary circulation, recourse should be had to digitalis (!), adonidin, and convallaria.

With these views Dr. Sée is in perfect accord, but he regards as an important omission that iodide of potash is not included in this group.

REFERENCES.—[1]"Brit. Med. Jour.," March 28, 1891, *et seq.*; [2]Ibid., Oct, 1890; [3]"Lancet," Oct. 18, 1890; [4]Ibid., Aug. 2, 1890; [5]"Medical Annual," 1890, 1891; [6]"Med. Chron.," Manchester, June, 1890; [7]"American Jour. of Medical Sciences," Nov., 1890; [8]"Deut. med. Zeit.," Berlin, May 12, 1891; [9]"Charité Annalen," Berlin, No. 14, 1891; [10]"Gazette Hebdom. de Med. et de Chemique," 1890; [11]"Zeit. f. klin. Med.," vol. xix., p. 3, 1891; [12]"Practitioner," Sept., 1891; [13]"Medicin.—Chirurg. Rundschau," Feb. 1, 1891; [14]"New York Med. Jour.,"

Jan. 10, 1891; [15]"Therap. Gaz.," Oct. 15, 1890; [16]"La Médecine Moderne," Dec. 11, 1890.

Synopsis.—(Vol. 1891, p. 247.) In cases of dilatation with pulmonary œdema, **Wine, Valerian, Camphor, Castoreum and Musk**, are recommended, together with **Blisters** to anterior chest wall, and **Active Laxatives**, preferably **Compound Senna Infusion**; **Morphia**, gr. ¼ subcutaneously in desperate cases. **Lead Acetate**, gr. j, every one or two hours is used from the onset. When hypertrophy of left ventricle with abnormal tension is determined, **Venesection** or **Issues** in cardiac region or in left arm, are recommended, or the use of **Purgatives and Diuretics.** When asthmatic attacks set in, **Digitalis**, long continued together with **Morphia Injections** and mild cathartics. For acute heart strain, **Tr. Valerian** and **Tr. Castoreum** are the best tonics. In paroxysmal tachycardia, **Iron** and **General Tonics** for anæmic cases; treat gastric or intestinal derangement, avoiding nervous excitement; **Morphia** subcutaneously moderates the attack; **Leeches** over cardiac region may relieve pulmonary stasis; **Compression of Pneumogastric Nerve** in cervical region. In cases of permanent slow pulse, **Nitro-Glycerin**, 1%, **Alcoholic Solution**, gtt. 3, once or twice daily, and **Iodide of Potassium** or **Sodium** may be used. Of cardiac remedies **Digitalis** is best; **Scoparius** regulates heart beats; **Strophanthus** allays dyspnœa and angina pectoris; **Convallaria** is well tolerated and is not cumulative; **Caffein** acts more on kidney than heart; **Iodide of Potassium** in all cases of dilatation or degeneration, also in false angina combined with **Antipyrin** or **Pyridine Inhalations.** For angina pectoris **Iodides** may be used, gr. 45 to 60, daily for three or four years, suspending them for eight to ten days each month when **Nitro-Glycerin** is used.

In mitral diseases with œdema, **Apocynum Cannabinum Tincture**, ♏10 (p. 9); Tincture **Cactus Grandiflorus**, ♏5 to 15 in asthenic conditions (p. 15); **Chloralamide**, gr. xxx to xlv, for insomnia (p. 21); **Diuretin**, 6 grammes daily in gramme doses as diuretic (p. 26); **Rubus Chamæmorus** as diuretic (p. 50); Tincture **Veratrum Viride**, gtt. 3, for palpitation of functional origin (p. 52).

HEMIPLEGIA.

Synopsis.—(Vol. 1891, p. 266.) In cases where temperature drops to 95° or 94°, **Cold Applications to Head** and **Hot Bottles** applied to **Feet**, giving **Potassium Bromide**, gr. 20, and **Tincture of Aconite**, ♏4 or 5, if face is much flushed. If occlusion of cerebral vessel can be diagnosed, **Stimulants** and **Digitalis** with **Ether** or **Aromatic Spirit of Ammonia** may be used, but not if due to hæmorrhage. If paralyzed muscles are flaccid **Faradization** is beneficial, and **Liq. Strychniæ** ♏3 or 4, with **Liq. Arsenicalis** and **Citrate of Iron and Ammonia.**

HEPATIC ABSCESS. *Frank J. Wethered, M.D.*

TREATMENT.—Mr Godlee thus summarizes his views on the treatment of abscess of the liver, as contained in his Brompton Hospital Lectures: (1,) Pyæmic abscesses of the liver do not call for surgical interference. If in rare cases one should point, it is opened only to relieve symptoms, without hope of doing permanent good; (2,) The same observations apply to abscesses resulting from suppurative phlebitis of the portal vein; (3,) Multiple abscesses associated with dysentery

or ulceration of the bowels are very unfavourable for surgical treatment. They must, however, be opened, and treated on the same lines as the single or tropical abscess, because they cannot be certainly diagnosed; (4,) Single abscess of the liver, whether tropical or not, must be opened, if it approach the surface, the following precautions being adopted: (*a*,) If it present at the epigastrium, the presence of adhesions must be ascertained before incising the liver; (*b*,) If through the chest wall, a spot must be chosen below the normal limit of the pleura. If by chance either pleura or peritonæum be opened, the opening must be closed with a double row of stitches before incising the liver; (*c*,) Strict antiseptic precautions must be throughout adopted, either carbolic acid or some slightly soluble salt of mercury being employed for the dressings; (*d*,) The drainage tube must be of large size at first, and a tube of some sort must be kept in until the discharge is reduced to a very minute quantity. If the abscess have burst into the lung, pleura, pericardium, peritonæum, or kidney, and the position of the abscess can be clearly determined, it must be opened without delay. If the position of an abscess be only suspected and the patient be losing ground, it is right to puncture the liver in the most likely situations, bearing in mind that, though usually quite harmless, a slight amount of risk accompanies this very trivial operation. This rule applies to cases in which the abscess has ruptured into any of the cavities enumerated above. If, on the other hand, whether the abscess have ruptured or not, there are no means of diagnosing the whereabouts of the matter, and the patient be not losing or even gaining ground, the surgeon should hold his hand for a time; (5,) Hydatids of the upper and back part of the liver are to be treated upon the same lines. In cases of this sort, and in cases of subdiaphragmatic abscess, it must be remembered that the diaphragm may be pushed up to a very great height, thus closely simulating intrapleural suppuration; (6,) Empyema, pericarditis, and peritonitis, caused by rupture of a hepatic abscess or hydatid, must be promptly dealt with on general principles.

REFERENCES.—"Practitioner," March, 1891, and May, 1890.

HEPATIC COLIC. *Frank J. Wethered, M.D.*

In the treatment of hepatic colic the most important indication is to lead to the increase of the biliary secretion, so as to enable the obstruction to be removed, and be forced onward into the intestine.

According to Prof. Sée[1] the objects in treatment of the colic which accompanies the passage of a gall-stone are two: the lessening of the pain, and the hastening of the passage of the stone. M. Sée points out that the injection of morphine, which is the best form of opiate

for relief of the pain, has nevertheless, the disadvantage that it lessens the biliary secretion, and consequently retards the passage of the stone. Chloral has not the same disadvantages, but is often not tolerated by the stomach in sufficiently large dose, to subdue the pain. The inhalation of chloroform may relax the tight contraction of the gall-duct round the calculus, but is apt to cause vomiting. Antipyrin is of no use. Among the cholagogues which facilitate the passage of the stone by inducing a flow of liquid bile, turpentine is often used in patent medicines, but its effects are slight. The two most powerful agents are **Salicylate of Sodium** and **Olive Oil.** The salicylate was shown by Rutherford and other observers to largely increase the watery constituent of the bile ; and, after being discharged with the bile into the intestine, to be re-absorbed and pass again through the hepatic circulation. It was found also to lessen the pain as well as being a cholagogue. To obtain its full benefit, it should be given in a large quantity of water. Olive oil is a powerful agent by supplying the fatty acids which dissolve the cholesterine of the gall-stones. It was used for some time empirically, and now physiology has indicated the reason of its success. It should be taken habitually by those who are liable to gall-stones, and it is generally found that any distaste for it, which is felt at first, can be soon overcome. The chief drugs to be avoided are active purgatives, which cause spasmodic contraction of the bile ducts, and substances which diminish the amount of bile secreted, viz., calomel, iron, copper, besides morphine, atropine, strychnine, and alkalies.

Dr. Ch. Eloy[2] recommends the use of **Baths** for the relief of hepatic colic. The bath should be given as hot as can be borne, or gradually rendered so by the addition of very hot water.

Witrowski[3] considers **Pilocarpine.** He records a case in which all remedies had been tried without success. Two injections of pilocarpine (half a syringe-ful of a 2 per cent. solution) produced notable relief. Hepatic colic disappeared completely, even although morphine had previously proved inefficacious, and the liver became less painful to pressure. Under the influence of injections of $\frac{1}{6}$ of a grain of pilocarpine, administered once or twice daily for three weeks, the jaundice, as well as the hepatic pain and the enlargement of the liver completely disappeared.

Witrowski notes, however, that the treatment was inefficacious in cases of jaundice resulting from tumours of the liver, and he makes the statement that when in doubtful cases pilocarpine, employed from ten to sixteen days, does not cause the disappearance of jaundice, the conclusion may be positively formed that the case is one of a malig-

nant nature. He, therefore, recommends the use of pilocarpine in all cases of jaundice, provided the condition of the heart will permit.

REFERENCES.—[1] "Therap. Gaz.," Dec. 15, 1891; [2] "La Médicine Moderne," Nov. 6, 1890; [3] "Bulletin Général de Thérapeutique," Oct. 12, 1889.

HERNIA. *A. W. Mayo Robson, F.R.C.S.*

The "Radical Cure" of Hernia has received much attention at the hands of surgeons during the past year,[1–9] but even yet there is much room for improvement, since relapses are not infrequent, as pointed out by Dr. Bull[1], who found one hundred and nineteen cases of relapsed hernia after McBurney's, Macewen's, Heaton's, Banks', Wood's, and other operations. It is, therefore, manifestly wrong to speak of radical "cure." In all the cases reported on, those patients who had worn trusses were in better condition than where no truss had been ordered.

In my own practice I always recommend the use of a light truss after operation.

The importance of performing the radical operation after kelotomy for strangulated hernia is fully acknowledged by all surgeons, and has formed the subject of a paper by Mr. Lockwood[2], who says: "No operation for radical cure can be relied upon which does not achieve two things, first, absolute obliteration of the sac without leaving a depression at its opening into the peritoneum; and, secondly, the repair of the abdominal wall."

Dr. Bennett[9] proposes to employ an omental pad for the radical cure of hernia. This he fixes by sutures opposite the internal aperture of the "rupture," the sac being dealt with as in other operations.

We scarcely think the suggestion of Dr. Kolischer[3] is likely to be extensively adopted. He proposes to strengthen the external abdominal ring by a flap of muscle, obtained by detaching the pyramidalis, together with the periosteum to which it is fixed, from the pubic symphysis.

The radical cure of hernia in children is advisable under certain circumstances, the most suitable being in the cases of: (1,) The children of poor people who have not the means of buying trusses, and who have not the time to look properly after the daily application of the trusses when they are able to buy them, for unless a truss is properly fitted after the hernia has been reduced, it is worse than useless; it is dangerous, because the pad of the truss may bruise the intestine and cause peritonitis or enteritis; (2,) In children where the hernia is so large that an ordinary truss is not sufficient to keep it

reduced while the child is running about playing ; (3,) In most cases where a truss has been worn for at least twelve months without any improvement, but where the hernia is increasing in size ; (4,) In persons who are likely to become labourers, or artisans who may have heavy work to do ; (5,) In each case after herniotomy has been performed for the relief of strangulated hernia ; and (6,) In all cases of irreducible hernia.

The subject has been treated by Dr. O'Neill[6], Mr. Parker[7], and Dr. Karenski[8], who all agree that the modern treatment of wounds has altered our views and our method of procedure in these troublesome and dangerous cases in children.

At one time it was thought desirable to avoid kelotomy in strangulated hernia, but now the results, if the hernia be operated on early, are so excellent, and the patient is placed in so much better a position by having the neck of the sac obliterated, that we can see no advantage in adopting such methods as the application of ice or the local application of ether in order to lessen the volume and return the rupture. Finkelstein, however, recommends local etherisation.[17]

The method is simplicity itself. The patient is placed on his back, with the hips slightly raised and legs flexed, and then every ten minutes or quarter of an hour a tablespoonful of sulphuric ether is poured on the hernia-ring and tumour. The application of ether is carried on for, as a rule, from three-quarters to three hours (or even four hours), until the tense tumour relaxes and lessens a little. As soon as this occurs, and if the strangulated bowel does not reduce itself, several slight efforts are made to reduce it, and almost "always" it slips with a gurgle and amazing ease into the belly cavity.

If the omentum alone be strangulated, the ether method is absolutely useless. As the ether causes an after feeling of heat and burning on the penis, labia, etc., Dr. Koch (America) protects these and other sensitive parts by previously smearing them with olive oil, and in addition covering them with pledgets of cotton wadding.

In recently strangulated hernia, where taxis under an anæsthetic fails and operation is declined, aspiration of the sac, or even of the protruded gut[16] may so far diminish the volume of the rupture as to permit of reduction by taxis.

When in herniotomy the gut is suspected to be gangrenous, the usual custom is to leave the dark bowel outside the abdomen or to return it just within the ring and insert a large drainage tube.[14] Helferich proposes the establishment of intestinal anastomosis between the arms of the loop of damaged gut above the suspicious part, which is allowed to remain outside.[12]

In preference to either of these plans, we would advise resection and suture of the divided ends. In two cases where we have performed this operation, the results have justified the method adopted.[10-11]

Fifteen cases of gangrenous hernia were treated in Professor Czerny's[3] clinic in the course of a period of nearly twelve years. In nine an artificial anus was established, and in four the gangrenous intestine was cut away and the divided portions of the intestinal canal were brought together by circular rows of sutures. The first mentioned plan of treatment resulted in complete recovery in five cases, and was attended by fatal results in the other four. Of the cases of primary resection, three were successful, and in the fourth case death, which occurred on the operating table,[15] was due to asphyxia.

"Reduction en masse" is ordinarily treated by exploring at the seat of the hernia, drawing down the sac, and dividing the stricture. Out of twenty-nine cases thus treated, Birkett says sixteen were fatal. Mr. Thorburn[18] reports two cases which he treated by abdominal section with perfect success. Mr. Lawson Tait[19] opened a discussion at the last meeting of the Brit. Med. Assoc. on the treatment of hernia by median abdominal section, and described the following method of performing a radical cure :—

Two common glover's sewing needles, armed with one piece of salmon silkworm gut, are fastened in some convenient needle holder at a very slight angle to one another, so that their points completely coincide, and can be made to enter through one hole in the skin. The left forefinger covers or occupies the inner aperture of the sac, the needles are made to enter from without, and are then separated. The outer needle is then made to dip deeply into the external column of the ring, and the inner needle similarly into the inner column. The needles are then pulled out through the central incision, and as many sutures as may be thought desirable are inserted in this way. When the insertion of the stitches is completed, they can be tied from within and cut short. The abdominal wound is then closed properly, and the operation is over.

Mr. Greig Smith said he could not subscribe to Mr. Tait's[1] proposal to make the treatment of hernia by abdominal section a rule of surgical practice. In strangulated hernias the only variety he would so treat was the rare one of obturator hernia.

Mr. Maunsell[30] advanced arguments in favour of laparotomy, even in strangulated herniæ, and described his method of performing the radical cure.

Mr. Bennett, Mr. Keetley, Mr. Barling, and Mr. Jordan Lloyd

could not agree with Messrs. Tait's and Maunsell's proposals, and thought the proposed change quite uncalled for.

Perineal Hernia in Women.—Professor Winckel[4] read before the Berlin Congress a monograph on what he termed perineal vagino-labial hernia. A series of drawings of cases were exhibited, with statistics of their nature and treatment. In all cases the hernia issued from the pelvis out of the perineum, and distended the labium major. Winckel distinguished three varieties, which may be combined in the same subject. In the "anterior" form, the sac protrudes between the sphincter vaginæ and the erector clitoridis. In the "median" form it bulges between the sphincter vaginæ and the deep transversalis perinei. In the "posterior" form the hernia passes before the levator ani and the gluteus maximus. The sac in all these varieties presents special characters of a nature only to be understood by the study of a good scientific demonstration. The abdominal orifice of the sac lies in front or behind the lateral true ligament of the bladder. According to Professor Winckel, the best treatment for all forms of perineal hernia in women is a radical operation, which must be performed from the perineal aspect, the sac being exposed by an incision through the vulvar structures.[26]

Ischiatic Hernia.—M. Alex. Wassilieff[25] describes a case of this rare form of rupture. The patient, a man aged fifty-four, was seized with pain in the left buttock when straining during defæcation. Symptoms of acute strangulation set in. After careful exploration, ischiatic hernia was diagnosed. The rupture was very tender. Taxis was undertaken, after preparations for an operation, and the mass went back. Relief was almost immediate. In the night, after a free escape of flatus, the symptoms recurred during an attempt to defæcate. Taxis again effected reduction, and a stout pad was fixed, by means of a bandage, over the region of the great sciatic notch. M. Wassilieff divides ischiatic hernia into a suprapyramidalis variety, where the intestine escapes between the border of the great sciatic notch and the upper margin of the pyramidalis. This is the commonest form, and if an operation be attempted the stricture should be divided towards the notch. The subpyramidalis variety includes a form where the gut escapes between the lower border of the pyramidalis and the lesser sacro-sciatic ligament (supraspinous), and a form where it passes out between the lesser and the greater ligament (subspinous), but it is doubtful whether subspinous ischiatic hernia has ever occurred. Diagnosis is always difficult. The seat of the tumour and the pain, which appears to be severe owing to the hardness of surrounding structures, as well as the general symptoms of hernia,

are the chief guides to diagnosis. The hernia may contain omentum, large intestine, small intestine, bladder, or ovary. In operation, the skin incision must be parallel to the line of ligature of the gluteal artery.

Mr. Stephen Paget[20] reports three cases of strangulated cæcal hernia in infants, a proper sac and the plica vascularis being found in each.

Diaphragmatic Hernia in the Newborn.—Dr. J. A. Gauthier[22] describes such a case where the infant lived one hour.

An interesting paper by Mr. Macready[28] deals with the rarer forms of ventral hernia, especially lumbar, and a figure is given to illustrate an excellent form of truss, which takes its fixed point from the opposite hip.

The subject of retro-peritoneal hernia has been dealt with in a brochure by Dr. Gonnesco, who describes four varieties : (1,) Duodenal; (2,) Pericæcal; (3,) Intersigmoid; and (4,) Through the foramen of Winslow.[24] An extremely interesting description of a case of retro-peritoneal hernia (the mesenteric hernia of Cooper) is given by Dr. A. G. Barrs.[23] The trouble apparently came on after eating sour fruit, and the symptoms were so severe as to end fatally within twelve hours of the onset of the first pains.

Dr. Ravult[21] draws attention to cicatricial stricture of the intestine after strangulated hernia. In a case that came under his care, this was the cause of death, two strictures being found, apparently due to cicatrization of the mucous membrane, caused by the previous strangulation.

REFERENCES.—[1]H. T. Bull, "New York Med. Jour.," May 30, 1891; [2]C. B. Lockwood, "Brit. Med. Jour.," July 19, 1891; [3]Kolischer, "Ann. of Surg.," March, 1891 ; [4]Lauenstein, "Ann. of Surg.," Feb., 1891 ; [6]H. O'Neill, "Brit. Med. Jour.," Feb. 7, 1891; [7]R. W. Parker, "Brit. Med. Jour.," Feb. 7, 1891; [8]Karenski, Suppl., "Brit. Med. Jour.," July 18, 1891; [9]H. H. Bennett, "Lancet," Sep. 12 and 19, 1891 ; [10]C. B. Lockwood, "Brit. Med. Jour.," March 28, 1891; [11]Mayo Robson, "Brit. Med. Jour.," March 28, 1891 ; [12]Helferich, "Ann. of Surg.," Feb., 1891 ; [13]H. Lupton, "Lancet," May 9, 1891 ; [14]H. Bennett, "Lancet," Oct. 18, 1891; [15]Krumm, Suppl., "Brit. Med. Jour.," May 2, 1891; [16]John Hern. "Brit. Med. Jour.," Feb. 7, 1891; [17]Finkelstein, "Med. Chr.," July, 1891: [18]W. Thorburn, "Med. Chr.," Sep., 1891; [19]Lawson Tait, "Brit. Med. Jour.," Sep. 26, 1891; [20]S. Paget, "Lancet," April 25, 1891; [21]Ravult. Suppl., "Brit. Med. Jour.," June 13, 1891; [22]Gauthier, Suppl., "Brit. Med. Jour.," Jan. 31, 1891; [23]A. G. Barrs, "Lancet," Aug. 8, 1891; [24]Gonnesco, "Ann. of Surg.," Oct., 1891; [25]Wassiliief, Suppl., "Brit. Med. Jour.," May 9, 1891; [26]Winckel, Suppl., "Brit. Med. Jour.," Jan. 10, 1891;

[27]Kronlein, "Ann. of Surg.," March, 1891; [28]J. Macready, "Lancet," Nov. 15, 1891; [29]Lange, "Ann. of Surg.," March, 1891; [30]H. W. Maunsell, "Brit. Med. Jour.," Sep. 26, 1891.

HERPES ZOSTER. *T. Colcott Fox, M.B.*

Féré suggests that the most probable cause of zoster is a slight epidemic cerebro-spinal meningitis, which may be widespread, but perhaps only of sufficient irritative power to cause the herpes at the roots of one or two nerves.

Smith recommends **Wet Cupping** as near the point where the affected nerve issues as possible. Barclay, of Banff, eulogizes a combination of **Phenacetin** and **Quinine** internally. Neilsen found that zona occurred in 1·8 per cent. of psoriasis patients treated by arsenic, and not in any treated by iodide of potassium. Emil Weiss disputes Pfeiffer's conclusions that zoster is distributed in relation to the blood vessels and not the nerves, but admits infectious theory.

REFERENCES.—"New York Med. Jour.," May 16, 1891; "Rév. de Méd.," p. 392, 1890; "Monats. f. Pract. Derm.," xi., 7; "Archiv. f. Derm. u. Syph.," xxii., p. 609, 1890.

Synopsis.—(Vol. 1890, p. 301.) When vesicles are present to prevent suppuration use **Sulphur** in the form of a gelatinous paste of **Sulphate of Zinc**, or lotions of **Corrosive Sublimate, Iodoform, Carbolic Acid,** or **Resorcin.** To abort vesicles, apply **Ichthyol** mixed with water and painted on, or a strong paste of **Zinc** and **Resorcin**; **Salicylate of Soda,** gr. x, every four hours proved useful.

(Vol. 1891, p. 271.) As dressing, **Alcohol** 90% or a solution of **Resorcin** 2 parts, **Alcohol** 100 parts; or **Thymol** 1 gramme, or **Menthol** 3 grammes, or **Phenic Acid** 25 centigrammes, or **Tannin** 2 grammes to 100 grammes of **Alcohol** 95%, and **Cocaine** may be added to any of these.

HYDATIDS.

Synopsis.—(Vol. 1890, p. 304.) Irrigation with 6% solution of **Boric Acid,** and injections of **Ox Gall** mixed with equal quantity of lukewarm water.

HYDROCELE.

Synopsis.—(Vol. 1890, p. 305.) Injection of **Liq. Hydrarg. Perchlor.** three times the strength of the B. P. solution.

HYDROCEPHALUS. *Henry Dwight Chapin, M.D., New York.*

Dr. Broca considers that some cases of hydrocephalus, not due to tubercle or neoplasm, may be relieved by evacuation of the intracranial fluid. Improvement may result, even if a cure does not occur. This may be hoped for in cases of syphilitic origin. Clinical and anatomical investigations have led Kean to the conclusion that the surest way of entrance to the distended lateral ventricle, and the best track for drainage was by a lateral opening, the crown of the trephine being applied three centimètres behind, and three centrimètres above

the external auditory meatus. The brain should then be perforated by the trocar, the latter entering from three to six centimètres above the external auditory meatus, and penetrating directly to the ventricle. No injury would be done by such a wound to any vital portion of the brain. The principal danger in all the recorded cases seems to have been from the too rapid evacuation of the cephalo-rhachidian fluid.

REFERENCE.—"Rev. Mens. des Mal. de l'Enf.," March, 1891.

HYDROPHOBIA.

Synopsis.—(Vol. 1891, p. 272.) Copious Blood-letting with or without use of Mercury, Cold Effusion of Vapour Baths, or use of Pilocarpine, Curare, Chloral and Chloroform, to lessen violence of spasms. Morphia is useless and often aggravates.

HYPERHIDROSIS LOCALIS. *T. Colcott Fox, M.B.*

For hands and feet: **Ichthyol,** ʒj; **Vaselin,** ʒjss; to be rubbed in night and morning, after washing in hot water. Apply tincture of **Belladonna,** 15 parts, in 120 parts of **Eau de Cologne.**

Synopsis.—(Vol. 1890, p. 305.) When the parts are cold, bathe at night with **Hot Water** to which **Camphor, Mustard, or Vinegar** has been added. Then dry and use, ℞ Turpentine 5 parts, Ichthyol 5 parts, Oxide of Zinc 10 grammes, M.; Ft. Ung. In the morning wash off the ointment and use **Friction** with **Ice-cold Water** till skin is warm, and powder with a powder containing **Mustard Flour.** If the parts are warm, use lukewarm **Baths** at night, following with 2½% **Ichthyol Ointment,** washing it off in the morning with lukewarm water and **Ichthyol Soap,** leaving on some of the dry soap suds.

(Vol. 1891, p. 272.) ℞ Perchloride of Iron ʒiij, Glycerine ʒj, Essence of Bergamot ʒij, M. Apply with pencil or swab.

HYPERTRICHOSIS. *T. Colcott Fox, M.B.*

Increasing and more widely distributed experience has proved **Electrolysis** to be an efficient and satisfactory method of removing hairs, but has also shown that the requisite skill can only be acquired after considerable practice, and that it is useless to formulate hard and fast directions, for instance, as to the strength of the current, the use of a galvanometer, the amount of traction to be used on the hairs, the character of the needle, the length of time the needle should be left in the follicle, the number of hairs to be extracted at each sitting, and so on. Beginners had better not exceed a strength of two milliampères. and should use a galvanometer.

Fred. Van Allen, of Madura, caused a permanent cure of hypertrichosis in about a year and a half by the following method: He took **Powdered Air-slaked Lime,** ʒj, and **Orpiment,** gr. ij., and added water enough to form a paste. This was applied to thickness of ¼ inch, and allowed to remain fifteen to twenty minutes, about twice a week at

first, then once a week, and finally once a month. Neumann's formula is :—

℞ Calc. Hydrat.	℥jss	Amyli		℥j
Orpiment	℥iij	Aq. Calcis	q.s. ut fiat pasta.	

Clasen says **Sulphohydrate of Sodium** (1 part to 8 of water), and especially **Sulphide of Barium** (50 parts with 25 each of starch and oxide of zinc), are the two best depilatories.

REFERENCE.—"Monats. f. Prakt. Derm.," ix., p. 541, 1889.

HYPOPION ULCER. (See also "Eye.")

Synopsis.—(Vol. 1890, p. 312.) Brush 2½% solution **Nitrate of Silver** over conjunctiva after cauterizing the ulcer with the galvano-cautery, and using **Atropine**; **Eserine** is used where prolapse is about to take place, but iridectomy should be done here early. Where ozæna and recurrent hypopion ulcer exist, the ozæna must be treated by irrigations of **Perchloride of Mercury** solution, 1 in 2000, twice a day.

HYSTERIA. *Græme M. Hammond, M.D., New York.*

M. Pitres[1] describes the method of treating hysterical fits as follows: Having released the patient from all the physical restraint which may have been exercised over her by friends, the physician should search for the antispasmodic zones. These are most frequently found in the ovarian and epigastric regions. They do not always exist, but if they do, energetic pressure made upon them will bring the crisis to an immediate termination. Another efficacious manœuvre is prolonged and gentle compression of the eyeballs. This usually induces hypnotic sleep. Bernheim induces sleep by verbal suggestion. The patient may be left in the hypnotic sleep until she awakes, or it may be suggested to her that when she awakes the crisis will be over, and then to awaken her by blowing in her eyes or by speaking sharply to her.

The constant galvanic current may be used by placing one electrode on the forehead, the other indifferently upon the abdomen or the lower limbs. The direction of the current should then be reversed two or three times. The current should be fairly strong—30, 40, or even 80 elements of Trouve's battery should be used.

Inhalations of **Ether**, **Chloroform**, and **Nitrite of Amyl** are often successful in aborting the attack.

Enemata of chloral hydrate, and hypodermic injections of morphine (in some rare cases), are suggested.

To prevent a recurrence of attacks, ascertain what spasmodic zones the patient may have, and, should these zones be painful or easily excited, apply ice-bags over them or frequently spray them with ether, or exert pressure on them permanently in a mechanical form. The excitability of the nervous centres can be allayed by means of chloral or morphine. No mention is made of bromides.

Dr. V. Paulet[2] reports a number of cases of hysteria treated by **Simulo**, in which it appeared to have decidedly good effects. It should not be given in the form of alcoholic tincture, as the alcohol may neutralize the good effects of the drug.

REFERENCES.—[1] "Therap. Gaz.," Feb. 16, 1891; [2] "Therap. Gaz," Oct. 15, 1890.

Synopsis.—(Vol. 1891, pp. 13 and 41.) **Bromide of Gold**, gr. ½ to j; **Mutisia Viciæfolia.**

INCONTINENCE OF URINE. (See "Urine.")

INFLUENZA. *Frank J. Wethered, M.D.*

The two epidemics which have visited this country during the last two years have naturally caused much medical thought to be concentrated upon this complaint; and thanks not only to the efforts of the medical officers of the Local Government Board, but also to those of many other observers, our exact knowledge and understanding of the disease have been very materially increased.

It must, however, be admitted that with all our improved means of investigation, we are but little advanced as regards the etiology of this strange complaint. Various observers have claimed to have discovered a pathogenic micro-organism, but none of these have stood the test of Koch's formula.

Seminola[1], in speaking on this subject, writes as follows: There exist many reasons for assuming that its nature, and consequently its origin, is parasitic, for it would be difficult to explain how the animal organism, after suffering with the influenza, could experience such a diminution of its power of resistance and those disintegrating manifestations which none but a microbic and violent agency seems capable of producing, as if a leaven had penetrated into the system. But for all that, there may be cosmotelluric conditions, undetermined and undeterminable, capable of producing very severe disturbances.

The symptoms of influenza are too well known to need discussion here, but we would simply draw attention to the inheritances left by the influenza to the nervous functions, such as the obstinate prostration, various neuralgias, and different forms of paralysis.

It has been observed[2] by several most competent practitioners that although one attack has not appeared absolutely to protect those who suffered one year from illness again the next season, yet that in the most remarkable way villages in which the influenza prevailed extensively in 1890 were almost or quite free from the disease in 1891, whilst adjacent villages scarcely affected before have quite recently been generally and severely attacked.

Dr. Mitchell Bruce[3], in a lecture delivered at the Charing Cross Hospital dealing with the complications of influenza, said: "Pneumonia, the second complication of influenza, is one which was particularly abundant in the last epidemic, and is also very prevalent in the present one. As far as my experience goes there are three fairly differentiated types or varieties of pulmonary inflammation to be found in connection with influenza. The first type is a well-developed ordinary acute croupous pneumonia; the second is a very curiously-developed pneumonia, popularly called "congestion," which is apparently croupous pneumonia in the stage of engorgement, where the exudation never becomes completely solid, but maintains a more or less fluid or semifluid character, and the third is that broncho-pneumonia of which I have just said something in connection with bronchitis.

"Amongst the rarer secondary affections may be mentioned profuse bronchorrhœa; inflammation and swelling of the throat glands; a scarlatina-like eruption; swelling of and effusion into the knee-joint; acute alopecia (?); intense sleepiness—the so-called "nona"; and puerperal symptoms, scarcely distinguishable from those of ordinary septicæmia; whilst other and later affections have been not uncommon, though scarcely so much so as last year, such as empyema, purulent mucous discharges from the nose or ear, albuminous or bloody urine, a recrudescence or revival of the disease from slight causes, and a markedly abiding cardiac and general asthenia."

TREATMENT.—Strictly speaking there is no cure. We do not know the exact nature of the disease, and it may be long before we do so, but some empirical remedies have been used with a certain amount of success.

Dr. Mitchell Bruce concluded his lecture with the following advice: "Send the patients to bed, provide a good nurse, warmth, and rest, and feed them freely. See that the diet is fluid and of a highly nutritious and stimulating kind, including a definite allowance of wine or brandy. For the first few hours order 10 or 15 grain doses of the **Salicylate of Sodium;** and as soon as the pain is gone, drop that and put the patient upon free doses of **Quinine** or **Cinchona.** With these you may have to combine in different instances a whole series of other drugs. You may have to give in the case of bronchitis such powerful remedies as **Carbonate of Ammonium** or **Liquor Ammoniæ Acetatis;** in cardiac complications **Digitalis** and **Strychnine.** In cases of pneumonia by combining these you will employ remedies directed both to the lungs and to the heart, and that along with quinine directed to the specific and original cause of the illness. This is a great deal

of drugging, feeding, and stimulating, but the condition is one that calls for prompt treatment. There must be no waiting to see what you are to do next day, for by that time the patient may have drifted deeply into some of those very grave complications which I have just described, and may be beyond the reach of treatment."

Sir Peter Eade gives the result of his experience: "I fear that our increased experience has not shown us any specific remedy capable of controlling the disease, unless **Salicin** or the **Salicylates** may in some degree possess this power. As its main effect is to depress nervous vitality, so the avoidance of any debilitating treatment has been the first essential principle, and all measures calculated to rest and comfort and support the patient the second. Of drugs, I think that **Antipyrin** in 5 grain doses has held its ground as the most effective remedy for the primary headache; whilst for the bronchial irritation and inflammation, nothing has appeared to be so generally useful as the **Carbonate**, or the **Spirit of Ammonia**, with **Tincture of Bark**, combined with **Chloric** or **Sulphuric Ether** as required. **Champagne** or other **Wine**, or some spirit, has been most valuable; and warmth externally, **Anodyne Embrocations**, and inhalations of **Carbolic Acid** with **Conium** have proved most useful in suitable cases; also, after the existence of the disease for some days or longer, the **Tincture of Iron** with **Quinine** and a mineral acid has occasionally given distinct relief. The treatment by iron has of late been specially recommended, but we must not forget that in 1847 Sir Thomas Watson wrote: 'I know no tonics so good as the **Sulphate of Quinine** or of **Iron** for these patients.' The iron salt would appear to be specially useful in those cases where a suppurative or alkaline tendency has shown itself."

Dr. Giovanni Merama condemns the use of sulphate of quinine, but advises the employment of 3 to 5 grains of **Valerianate of Quinine.**

The present writer had very good results from the use of 2 grain doses of **Quinine,** given three times daily, dissolved in **Citric Acid,** given in effervescence with **Carbonate of Soda.** Under this treatment the temperature rapidly fell, and complications of all kinds were generally avoided. In connection with the drug treatment the patient was put to bed on the appearance of the first symptoms, and not allowed to rise until the temperature had remained normal for forty-eight hours. It need scarcely be stated that every precaution must be taken in order to prevent a relapse, and the patient should not be allowed to leave his room for at least a week.

Tinct. of Gelsemium is regarded as a specific for the fever of influenza by Dr. Percy Wilde. (See "Dict. of New Remedies," p. 47.)

REFERENCE.—[1] "New York Med. Jour.," April 11, 1891; [2] "Lancet," May 30, 1891; [3] "Brit. Med. Jour.," Aug. 8, 1891.

Synopsis.—(Vol. 1890, p. 530.) To reduce temperature, **Quinine**, grs. xv to xx; **Salicylate of Soda**; **Salicine**; **Aconite**; to relieve headache, **Antipyrin**, grs. j to iv, also **Exalgine** and **Phenacetin**; in pulmonary cases, **Stimulant Expectorants**; in gastro-intestinal cases, **Opium**; in simple cases, **Tincture of Gelsemium**, gtt. 1 hourly; **Tincture of Aconite**, with cardiac tonics such as **Digitalis**; **Strophanthus** or **Citrate of Caffeine** is required in many cases.

INGROWING TOE-NAIL.

Synopsis.—(Vol. 1890, p. 316.) Washing with **Perchloride of Mercury** solution, and then applying strong **Perchloride of Iron** solution; enveloping toe and nail in **Tinfoil**.

INSANITY.

Synopsis.—(Vol. 1890, p. 325.) In cases due to alcohol, the abuse of morphia, chloral, etc.; or in partial dementia of middle life in gouty subjects; or in cases of melancholia with dry skin and congested liver; or in puerperal insanity, the **Turkish Bath** is valuable, and is palliative in epileptic insanity, general paralysis of the insane and many chronic cases. **Hyoscine** is the most satisfactory sedative; **Sulphonal** is not very reliable.

INSOMNIA.

Synopsis.—(Vol. 1890, p. 329.) **Sulphonal** is useful but not certain; **Chloralamide**, gr. 15 to 60 (average 45 grains) by mouth or enema in nervous insomnia; **Muriate of Hyoscine**, gr. $\frac{1}{120}$ to $\frac{1}{80}$, subcutaneously, and increased after a time, is better than sulphonal where much motion and excitement exists, and has proved palliative in paralysis agitans and multiple sclerosis; **Paraldehyde**, ℥j dose, repeating it in about three hours. ℞ Paraldehyde, Mucil. Acaciæ āā ℥j, Aq. ad ℥ij, M. **Urethan** is not very trustworthy; **Uralium** is said to induce sleep more quickly than any other drug in animals.

(Vol. 1891.) **Chloralamide**, gr. 30 to 45 in simple cases (p. 21); **Hypnal**, gramme j, sedative and anodyne (p. 35); **Methylal**, ℥iss to ℥ij (p. 39); Tincture **Cannabis Indica**, ♏ x, in senile insomnia (p. 17); **Nux Moschata**, gr. 10 to 60, often useful in delirium tremens (p. 43).

INTESTINAL SURGERY. *A. W. Mayo Robson, F.R.C.S.*

Although there is still much room for improvement in the surgery of the intestines, the year's work in perfecting details, carrying out improvement, and in recording experience, is of distinct value.

Intussusception.—Dr. Sénn[37] affirms that the treatment of intussusception should follow the lines employed in strangulated hernia; that peristalsis should be arrested by emptying the stomach, by suspending stomach feeding, and by the administration of opiates; and that, failing reduction by insufflation (with hydrogen gas), aided by inversion and complete relaxation of the abdominal muscles by the use of an anæsthetic, surgical interference is called for. Enterostomy and colostomy are only warranted if the patient's condition does not allow of laparotomy, which should be done in all other cases of irreducible

invagination. The direct reduction in acute cases is aided by previous compression with a large sponge, to reduce the swelling of the intussusception, and is effected by drawing on the bowel in opposite directions, above the neck of the intussuscipiens, and upon the sheath below the apex of the intussusception, combined with pressure against the intussusception from below upwards. Adhesions between the serous surfaces may be separated by the use of a Kocher's director or a small pair of straight, blunt-pointed scissors before traction is made. After reduction any small patches of gangrene or rents of the peritoneal coat are to be covered by stitching the peritoneum over them. Recurrence is avoided by shortening the mesentery, by folding it in the direction of the bowel, and fastening the fold in this position with a few catgut or silk sutures. Dr. Sénn's further conclusions, which are of great importance, hardly bear condensation, so we will quote them in their entirety :—

(1,) If the external surface of the bowel presents evidences of gangrene, disinvagination should not be attempted, and in such cases a resection is absolutely indicated.

(2,) The resection, under such circumstances, should always include the whole intussusceptum, but only so much of the intussuscipiens as is threatened by gangrene.

(3,) If the continuity of the bowel cannot be restored by circular suturing, either on account of the difference in size of the lumina of the resected ends or inflammatory softening, the same object is attained in an equally satisfactory manner, and more safely by lateral implantation or intestinal anastomosis.

(4,) If the invagination is not extensive, but irreducible, and the bowel presents no signs of gangrene, the obstruction should be allowed to remain and the continuity of the intestinal canal restored by making an anastomotic opening between the bowel above and below the invagination by the use of perforated decalcified bone plates.

(5,) If the invagination is extensive, irreducible, and the bowel presents no indications of gangrene externally, the intussusceptum should be made accessible through an incision below the neck of the intussuscipiens and resected after securing the stump with an elastic ligature, after which the obstruction is permanently excluded by an intestinal anastomosis.

(6,) In irreducible colico-rectal invagination, or when this form of invagination has been caused by a malignant tumour, the intussusceptum should be drawn downward and removed by the operation devised by Mikulicz.

In Mr. Hutchinson's "Archives" the subject of intestinal obstruction

from gall-stones is discussed at some length, and several interesting examples are given to show how nature is often capable of dealing successfully with these cases, and how difficult it is to make a diagnosis of the cause, as nearly all the cases in which laparotomy has been performed, and the obstruction has been found to be due to gall-stones, it has been thought that some twist or band or internal hernia had been the cause.

I operated successfully in Nov., 1890, on a patient aged sixty-eight, where acute symptoms made me suspicious of a twist of the bowel, which I found and relieved, but the primary cause was probably a large gall-stone which passed by the anus some days after I had performed laparotomy; had I waited in this case, the volvulus would in all probability have proved fatal, as the vomiting had been incessant for eight and fæcal for four days. It may not, therefore, be always wise to wait[22]. A case reported by Thiriar[14], in which a large gall-stone which had caused obstruction for eight days was safely removed by enterotomy, seems to point in the same direction.

Dr. Heydenreich[33] reports a case of obstruction by masses of round worms, which were ultimately discharged through an opening made in the small intestine in the left groin. The case had been diagnosed as acute intussusception.

Mr. Bryant[12] advocates the operation of ileostomy in organic disease of the cæcum causing obstruction, and suggests that Nelaton's directions to open the coil of bowel which presents in the wound made in the right iliac fossa be departed from, and that the finger should be at once pushed down to the cæcum, from which position it is easy to work up the ileum with certainty. If the disease be clearly made out to be in the cæcum, and the patient is strong enough to bear a little longer operation, ileo-colostomy or lateral apposition by Sénn's plates will be likely to yield more satisfactory results. The former operation has been put into practice by Mr. Jessett[17], and the latter by Mr. H. Littlewood, Mr. H. Atkinson, and Mr. Ward. Dr. Russell[3] has also performed lateral apposition with complete success in a case of intussusception.

Contraction of the ileo-cæcal valve is a somewhat rare affection for which enterotomy, digital dilatation, and resection have been done, but M. Péan[29] has improved on these methods, and in two cases has incised the valve and then brought the edges of the incision in the ileum to the edges of the incised cæcum, with complete success.

Dr. Sachs[11] has proposed a modification of Sénn's method of intestinal anastomosis by the use of an appliance resembling in form a sleeve stud perforated in the middle. This is made up of two bone

plates fixed together, yet separated to a small extent from each other as far as the uniting portion immediately around the central perforation. A longitudinal incision having been made in each of the opposed portions of intestine, each disc is inserted into the intestinal canal on either side, and the intestinal anastomosis is thus readily and speedily established. Sutures are then applied through the serous membrane on each side wherever there is a tendency to protrusion of the mucosa. The following advantages are claimed for this method, which, however, has as yet been tested only in experiments on rabbits : (1,) The interior of the intestine is not exposed for so long a time as it is in Sénn's operation ; (2,) The margins of the intestinal wound rest in the deep annular groove between the joined discs, and are thus protected against infection and the results of pressure ; (3,) There is no risk of the cut edges adhering together ; (4,) It is unnecessary to pass any suture through the whole thickness of the intestinal wall.

Dr. F. B. Robinson[16] has used rawhide plates (*Fig.* 10) instead of bone plates on account of their cheapness and accessibility. The rawhide plate is made by shaving the hair from the green hide of an ox. Then cut the hide into strips an inch wide and two inches and a half long. Perforate the plate by a diamond-shaped aperture (half an inch by three-quarters of an inch). Then apply four to six sutures to the plate, armed with four to six needles, and it is ready for use. The plate can be used dried or green. If the hair is shaved from the green hide and then the hide is dried, it thickens and stiffens it so that almost any kind of plates suitable to any parts of the alimentary canal can be obtained. The features of these rawhide plates are—they are eminently suitable for the operation of intestinal anastomosis ; they are easily prepared, quite accessible, and very convenient ; they are suitably absorbable and can be well adapted to the character and quality of the intestinal tract.

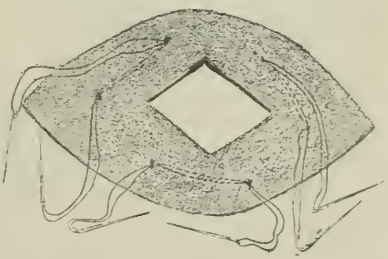
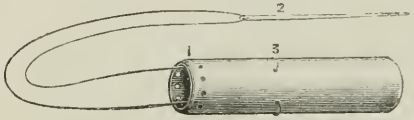


Fig. 10.

The same surgeon has also suggested a modification of Jobert's method of performing enterectomy, by avoiding the invagination sutures, and using a rubber tube about five inches long (three inch. above and two inch. below the end of the proximal gut) to keep the lumen of the bowel patent and prevent further invagination[4]. He also finds a similar rubber tube to add to the safety of circular enterorrhaphy[5].

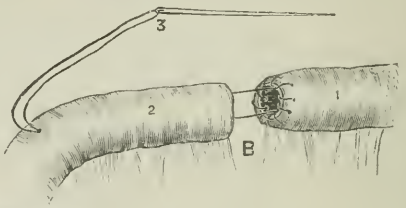
Dr. F. T. Paul's[18] method of using a decalcified bone tube is shown in the following diagrams (*Fig.* 11). It has only been thus far tried on dogs, but from Dr. Paul's success he recommends it as suitable for the human subject.

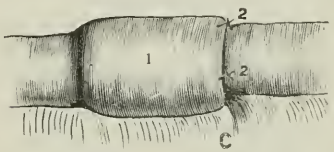
Enterectomy for tubercular disease of the intestine is scarcely likely to be frequently practised, but it is interesting to note that Dr. Frank[16] excised thirty inches of the ileum for this condition, and that ten months afterwards the patient was in good health.



A. The decalcified bone tube: (1,) The lower or distal end, perforated for sewing to the bowel; (2,) The traction thread armed with long sewing needle; (3,) Its attachment to the tube.

B. A stage in the operation: (1,) The proximal end of the bowel, with the tube sewn in; (2,) The distal end, not yet sewn to the proximal end, but with the traction thread (3,) passed.





C. The operation completed: (1,) The sheath or intussuscipiens of the invagination; (2,) The Lembert sutures, for retaining the parts in position.

D. The parts dissected: (1.) The tube *in situ*; (2.) The traction threads cut short; (3,) The proximal end of bowel entering the intussusception; (4,) The distal end supplying the returning and ensheathing layers.

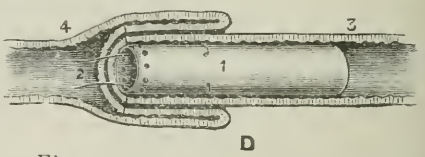


Fig. 11.

M. Chaput[15] has covered intestinal perforations with plates made of five or six layers of iodoform gauze, which are stitched to the margins of the perforation. He says they act as temporary grafts, and become eliminated into the lumen of the bowel.

Mr. Harrison Cripps[36] and Mr. H. Allingham[38] continue to advocate the superiority of inguinal over lumbar colotomy, and my own experience is also in favour of the inguinal operation, but in acute cases,

where the bowel has to be opened at once, I prefer to employ the trochar shown in the following diagrams (*Fig.* 12), so as to convey the liquid fæces and gas quite away from the wound into an antiseptic solution placed by the bedside. The cannula can be retained for two or three days until the peritoneal surfaces have united. I have also employed it in enterotomy for acute obstruction on several occasions with satisfactory results.[39]

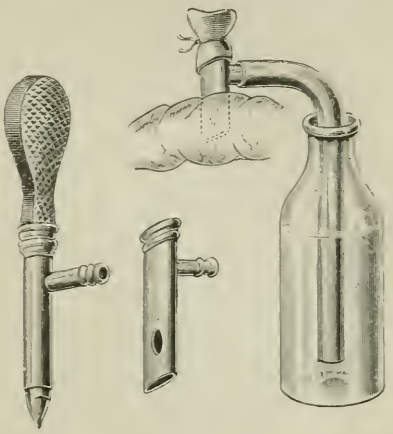


Fig. 12.

Mayo Robson's trochar for use in enterostomy or inguinal colotomy where the bowel requires to be opened before adhesions have formed between the visceral and parietal peritoneum.

Dr. Paul[35] has, under similar circumstances, employed the method shown in the following diagram (*Fig.* 13), the upper end of the lower segment of colon being sutured and returned as in Madeburg's operation.

Stricture of the intestine has formed the subject of several papers during the year. Boas[32] describes the symptoms of stenosis of the duodenum, dwelling on the fact that the presence of chyme or large quantities of fluid in the fasting stomach point to constriction of the lumen of the gut, and the biliary character of the fluid shows the stricture to be below the common bile duct, the diagnosis for pyloric stricture being made from the absence of dilatation of the stomach, and the absence of sarcinæ and yeast cells in the vomit. Dr. Newton Pitt[28] described an intestinal stricture secondary to strangulation in a hernial sac. Mr. Harrison Cripps[36] advocates exploratory laparotomy in cases where stricture of the colon is suspected, and reports two cases

Fig. 13.

A. Diagram illustrating a method of performing inguinal colotomy: (1,) The upper end of the divided sigmoid flexure brought out of the wound; (2.) A glass tube tied into the bowel; (3,) Rubber tube for conveying fæces away from the wound. B. Improved form of glass tube.

where he performed the exploration in the left inguinal region, and afterwards proceeded to inguinal colotomy.

Mr. H. A. Reeves[20] interesting case of ileo-rectostomy for the relief of an intestinal fistula, shows how Dr. Sénn's method may be made use of for diverting the fæcal stream. The case is too long to report in this work, but is well worth referring to by those who may have such a trying case to deal with.

Mr. Arbuthnot Lane[19] reports two cases of resection of intestine and apposition by bone plates. He advocates the operation in cases of gangrenous or damaged bowel in strangulated hernia, but recommends that the operation be performed through an abdominal incision. Our experience in cases of gangrenous hernia is in favour of resection and circular enterorrhaphy at the hernial site, as the patient is usually not in a fit state to bear the double operation.

Although Mr. Lockwood's[40] treatment of the two cases of perforating ulcer of the duodenum did not lead to recovery, the right treatment was adopted, and the patients were placed in the only condition in which recovery could have been possible. The symptoms were those of acute intestinal obstruction, with an entire absence of premonitory symptoms.

REFERENCES.—[1]Walter Briggs, "St. Louis Med. and Surg. Jour.," 1891 ; [2]Kœnig, "Ann. of Surg.," Feb., 1891 ; [3]T. H. Russell, "New York Med. Jour.," Dec. 20, 1890; [4]Fred. R. Robinson, "Ann. of Surg.," June, 1891 ; [5]Fred. R. Robinson, Ibid., Feb., 1891 ; [6]Fred. R. Robinson, "New York Med. Jour.," Oct. 18, 1891 ; [7]Thos. Bryant, "Lancet," Jan. 17, 1891 ; [8]Clausi, "Practitioner," Dec., 1890; [9]"Le Progrès Médical," Dec. 27, 1890 ; [10]E. W. Mitchell, "London Med. Rec.," Feb. 10, 1871 ; [11]Sachs, Supplement "Brit. Med. Jour.," Nov., 22, 1890; [12]Thos. Bryant, "Lancet," Jan. 3, 1891; [13]F. T. Paul, "Brit. Med. Jour.," July 18, 1891; [14]Thiriar, "New York Med. Jour.," July 18, 1891; [15]Chaput, Ibid., July 18, 1891 ; [16]Frank, Supplement "Brit. Med. Jour.," May 2, 1891 ; [17]F. B. Jessett, "Lancet," Feb. 14, 1891; [18]F. T. Paul, Ibid., May 30, 1891; [19]Arbuthnot Lane, Ibid., p. 1101, May 16, 1891 ; [20]H. A. Reeves, Ibid., p. 1089, May 16, 1891 ; [21]Hutchinson's "Archives," Ibid., July, 1890 & 1891 ; [22]Mayo Robson, "Leeds and W. R. Med. Chir. Soc.," Dec., 1890 ; Jessett, "Brit. Med. Jour.," Dec., 1890; [23]Sénn, "Lancet," Aug. 29, 1891 ; [24]H. A. Reeves, Ibid., p. 221, Jan. 24, 1891 ; [25]Lockwood, Ibid., p. 198, Jan. 24, 1891 ; [26]Auirecht, Ibid., p. 946, Oct. 24, 1861 ; [27]Greig Smith, Ibid., March 21, 1891 ; [28]Newton Pitt, Ibid., p. 828, April 11, 1891 ; [29]Péan, "Bulletin de l'Acx. de Méd. ; Supplement "Brit. Med. Jour.," May 23, 1891 ; [30]Krumm, Supplement "Brit. Med. Jour.," May 2, 1891 ; [31]Menton, Ibid., Aug. 1,

1891 ; [32] Boas, "Med. Chr.," Sept., 1891 ; [33] Heydenreich, Supplement "Brit. Med. Jour.," Sept. 26, 1891 ; [34] Abbott, Ibid., March 21, 1891 ; [35] F. T. Paul, "Brit. Med. Jour.," July 18, 1891 ; [36] Harrison Cripps, "Lancet," p. 986, Oct. 31, 1891 ; [37] Sénn. "Med. Chron.," Nov., 1891 ; and Supplement "Brit. Med. Jour.," Oct. 31, 1891 ; [38] H. Allingham, "Lancet," Oct. 31, 1891 ; [39] Mayo Robson, "Brit. Med. Jour.," Dec., 1891 ; [40] C. B. Lockwood, "Lancet," Nov. 21, 1981.

IRITIS (Serous).

Synopsis.—(Vol. 1890, p. 335.) Colchicine, gr. $\frac{1}{30}$ to $\frac{1}{15}$ a day, and if this fails inject Pilocarpine.

JAUNDICE.

Synopsis.—(Vol. 1891, p. 46.) Pilocarpine, gr. $\frac{1}{6}$, subcutaneously twice daily, said to be specific.

JOINTS (Diseases of). *F. S. Eve, F.R.C.S.*

Resections of the Knee in advanced life performed for Tuberculosis.—Although some few successful cases of this operation in advanced life have been recorded in this country, amputation is usually recommended after the age of thirty, if an operation be necessary. The results obtainable by excision may be fairly estimated by an analysis by Dr. O. Schlüter[1] of one hundred cases operated on between 1875 and 1888. The ages ranged from twenty to sixty, but, unfortunately, it is not stated how many cases were in the third decade of life. Four cases were over sixty years of age. Deducting those which came to amputation and deaths there remained eighty cases. Of these, forty-two (52½ per cent.) healed without interruption, whilst the remaining thirty-eight were delayed by suppuration, breaking out afresh of tubercular granulations, or necrosis of skin. Primary unions were few, perhaps ten in all. So far as determinable it took on an average about two months for the closure of the wound and before beginning the use of the extremity. Amongst thirty-six cases, those treated by bone-suture averaged fifty-eight days, those without, sixty-nine days, showing some advantage in favour of the former. Age made no particular difference.

Results.—Of twelve deaths, six were in consequence of the operation (two from erysipelas, one each from carbolic poisoning, sepsis, tetanus, and chloroform). Of eleven secondary amputations three were fatal. Of the remaining eighty, *sixty-four were cured;* the sixteen not cured still presented fistulæ, and five of these also had a loose knee.

Final Results.—Of seventy cases of which he has reports up to April, 1889 forty-four remained perfectly cured ; in five the fistulæ existing at their discharge healed later ; twenty had died—fifteen from

tuberculosis. To sum up the results to date, in the one hundred cases, forty-four are well, three not cured, eleven amputated, thirty-two dead, ten unknown. Whilst occasionally no influence or an unfavourable one is exerted on other tubercular processes by operation, much more frequently the influence seems to be favourable.

Expectant Treatment versus Operative Interference in cases of Tubercular Joint Disease.—This vexed question in the surgery of joint disease continues to form material for discussion. For a fuller statement of opinions the reader may refer to the "Medical Annual" of last year.

Mr. Watson Cheyne[2] summarizes the indications for and against operation as follows: "Operative interference is desirable in the following cases: Where chronic suppuration has occurred; at an early stage, where the disease is localized to one part of the synovial membrane or bone; in many cases, at a later stage, where there is a deposit in the bone along with general synovial thickening; in cases of diffuse synovial thickening, where expectant treatment has failed to arrest the progress of the disease; in cases where a better functional result can be obtained by operation; in cases, in adults, where deformities are present which can only be remedied by operation; in many cases where there are septic sinuses; in certain cases where phthisis is present, or the general condition such as to require removal of the disease; in adults more frequently than in children; in the poor more frequently than in the rich. Expectant treatment should be employed in the first instance in cases of diffuse synovial disease without suppuration, provided that there are no other reasons requiring operative interference, and it should be persevered in so long as improvement follows; also at first in cases in children where osseous deposits are present in parts where they cannot be reached without excision, or in cases where the presence of deposits in the bone is doubtful; also in some instances where septic sinuses are present. In any case it should be persevered in longer in children than in adults. The cures by expectant treatment when it is carried to excess are often obtained only at a great expenditure of time and after great endurance of pain, and at a certain risk to the patient; and it by no means follows because a good result is obtained in any given case by expectant treatment that it would not have been wiser, and that in a number of similar cases the results would not have been on the whole better, had operative measures been employed.

Arthrectomy of the Ankle-joint.—Professor Bruns[3] has lately described a new method of performing arthrectomy of the ankle-joint.

This is the latest addition to a long series of procedures—about thirty-five in number—that have been devised by different surgeons for the removal of disease from this articulation. It is pointed out that our recently acquired knowledge concerning the tuberculous nature of fungous disease, or white swelling of joints, has brought about a change in the methods of resection. Surgeons are no longer content with simply removing the osseous elements of the diseased joint, and leaving behind the pulpy soft structures, but they find it necessary now to remove the whole of the affected synovial membrane, and to take away only just those portions of bone which are the seats of tuberculous deposit. In a case of articular tuberculosis in which the disease affects only the synovial membrane, and the articular ends of the bones are quite free, the latter would now be left intact, whilst the former would be carefully dissected away. Such change in the object of surgical interference would, in the case of the ankle-joint, necessitate modifications of former methods of operation, which were intended to facilitate removal of large portions of bone, but would leave most of the synovial membrane intact. The method advocated by Bruns is a modification of König's operation for resection of the ankle, which is performed by two long anterior incisions. This operation, it is stated, exposes the anterior synovial sac, and permits of removal of this membrane and of the diseased portions of tibia and astragalus, but the back of the ankle remains inaccessible, and the posterior synovial membrane cannot be removed unless the whole of the astragalus has been resected. To the two anterior incisions made in König's operation, Bruns adds two posterior incisions, carrying one along the inner, the other along the outer, edge of the tendo Achillis. The following are the steps of the operation as performed by Bruns: Two vertical incisions are made in front of the ankle, each commencing about four centimètres above the line of the joint, and carried downwards in front of the corresponding malleolus as far as the medio-tarsal joint. The intervening portion of soft structures having been separated from the bones, the anterior synovial sac is dissected away. The interior of the joint is now exposed, and the ends of the bones may be dealt with according to the extent of the disease. If there be merely a tuberculous deposit in the lower end of the tibia or in the head of the astragalus, this may now be completely removed. If, however, as is usually the case, the whole of the joint be diseased, the articular extremities of the tibia and astragalus and both malleoli must be removed, and one or two posterior vertical incisions be made so as to expose and allow removal of the rest of the synovial sac. Removal of the whole or a greater part of the astragalus, if such a

step be deemed necessary, will be much facilitated by the two posterior incisions. If it be found necessary to make only one incision behind the joint, this should be carried along the outer side of the tendo Achillis. After the removal of the diseased structures, the edges of the anterior incisions are brought together by sutures, whilst the posterior wounds are left open for the purposes of drainage. Professor Bruns has performed this operation in fourteen cases with very good results, and recommends it strongly as one which affords free exposure of the diseased region, and at the same time causes as little injury as possible to the healthy parts of the joint.

The Treatment of Acute Effusion in the Knee Joint.—Mr. Edmund Owen[4] recommends the use of paracentesis in traumatic effusions, both of serum and blood, into the knee-joint. In some of his cases the aspirator was employed, but in others the distended joint was dealt with by a hydrocele cannula of about the gauge of a No. 1 English catheter. In the use of either instrument great care should be taken that it is aseptic, as well as the skin through which it is to be introduced. Another point to be attended to is, that when using the trocar and cannula, just as the fluid is ceasing to flow, the surgeon should block the end of the cannula with his finger, and so withdraw it that he does not introduce air into the joint. The puncture is made to one side of the patella. When withdrawing the cannula the track is obliterated by firm pressure with the finger. The skin puncture is covered with a scrap of lint dipped in collodion, or by a little pad of dry wool. The knee, together with the upper half of the leg and the lower half of the thigh, is then enclosed in lateral splints of house-flannel and plaster of Paris. The limb is fixed in the extended position, the foot being slightly raised. The firm pressure which is made around the joint is comforting, and it effectually prevents further effusion into the synovial membrane.

The writer has found that in some cases, in children, in which the fluid does not become absorbed under rest and pressure, and there is much heat, with turbid or sero-purulent fluid in the joint, that aspiration will sometimes save the joint from suppuration.

REFERENCES.—[1]"Ann. of Surg.," Feb., 1891 ; [2]"Lancet," Nov. 22, 1890 ; [3]"Munch. med. Woch., No. 24 ; Suppl. "Brit. Med. Journ.," July 25, 1891 ; [4]"Pract.," Feb., 1891, p. 81.

KELOID. *T. Colcott Fox, M.B.*

Leloiv and Vidal say **Multiple Scarifications** are most to be relied on. These are made at two millimètres' distance from each other, and crossed so as to form square or lozenge-shaped figures, deep enough to reach almost to the depth of the tumour, and long enough

to go just beyond its borders. Local anæsthesia is used. After the operation dress with boric acid, and next day apply mercurial plaster, changed night and morning. Repeat the scarifications till the growth disappears.

Plicque says that perhaps the best plan is to alternate scarifications and electrolysis. He considers that keloid has a special tendency to develop in malarial, scrofulous, and lithæmic subjects, and hence these predisposing causes must be treated.

REFERENCES.—"Ann. de Derm. et de Syph.," No. 3, 1890; Plicque, "Gaz. des Hôp.," Oct. 11, 1890.

KERATITIS. (See "Eye.")

KIDNEY (Surgery of). *E. Hurry Fenwick, F.R.C.S.*

Some very remarkable cases illustrating the progress of the surgery of the kidney have been placed on record during the last year.

Villous Tumour of the Renal Pelvis.—A case of this very rare disease has been operated upon by Mr. Thomas Jones,[1] of the Manchester Royal Infirmary. The patient was a man aged fifty-five The one prominent symptom in the case was the free hæmaturia, which had continued without interruption since the commencement of the attack, eighteen months previous to the man's admission to hospital. He removed it with the finger and a Volkmann's spoon, the surface from which it was dislodged being smooth, clean, and vascular. The patient made a good recovery.

Nephrolithotomy (following Nephrectomy) for Total Suppression of Urine.—No case could illustrate so forcibly the after risk of Nephrectomy, or the value of surgical interference in total suppression due to calculous blockage as the patient showed at the Royal Medical and Chirurgical Society by Mr. Lucas.[2] A woman aged forty-two came under his care in June, 1885. She had suffered from hæmaturia for seventeen years, with pain on the right side of the abdomen ; and for seven years a tumour had been palpable on that side, recognized to be the kidney. This was removed by lumbar incision in June, 1885, and found to be completely disorganized and filled with calculi. For three months she remained well ; and then towards the end of October in the same year she was suddenly seized one evening with violent and agonizing pain in the back and left loin. She passed a little urine soon after, but none subsequently ; vomiting set in in about half an hour. The vomiting and anuria continued, and on the fifth day from the onset of pain she had become drowsy and weaker, so that it was difficult to get her to answer questions. The pulse was weak and the temperature 99°. Ether being given, Mr. Lucas cut

down on the left kidney, and discovered a conical stone acting as a ball-valve to the top of the ureter. It was three-quarters of an inch in length, and from three- to five-eighths of an inch in diameter. Urine began to drop away out of the wound as soon as the kidney was opened, but the pelvis was not much dilated. For twelve days all the urine came through the wound; then an ounce and a half was passed from the bladder with much pain, and the quantity gradually increased, until a week later all was passed by the urethra. The wound did well, and was completely healed in ten weeks. The patient has since enjoyed good health for a period of five years.

Fatal Hæmorrhage in Nephrolithotomy.—Mr. Richman Godlee[3] records a case in which a large calculus was removed first from one kidney and afterwards from the other. In the latter operation no bleeding ensued on the first incision into the kidney, but the laceration which was caused by the removal of the stones gave rise to very free venous hæmorrhage, and though it subsided at the completion of the operation, it recurred fatally an hour and a half afterwards. Mr. Mayo Robson mentioned a case, a similar case, in which the hæmorrhage was so violent that he excised the kidney in order to save the patient's life, and he added another but fatal similar case which had come to his knowledge. Mr. Arbuthnot has stated he had controlled severe hæmorrhage after incision into the kidney by sutures passed through the renal substance.

Statistics.—Mr. Turner[4] mentions that of forty-three cases of renal calculus described in the post mortem records of St. George's Hospital for the past twenty-one years nineteen were cases of multiple stones. Both sides were affected in nine instances only. Of these, two had been operated upon for calculous suppression of urine. Of the one-sided cases the calculus was on the right side in seventeen, and on the left in fifteen. Pyonephrosis was present in twelve cases. In nine the ureter was completely blocked, and in eight of these the obstruction was at the renal end. With regard to the condition of the unaffected kidney in those cases in which only one side was calculous, it was granular and cystic in nine, lardaceous in two. There only remained eight cases in which the other kidney was either healthy, hypertrophied, or normal. The two points to be considered in the prognosis after operations upon the kidney were: (1,) The local condition as to the presence of pus; (2,) The condition of the other organ. He thought that in a very large proportion of the cases the other kidney if not actually calculous would be granular or undergoing some other form of degeneration.

Extirpation of Renal Cysts by Dissection.—Professor Tuffier[5] argues

that the best treatment in cases of large unilocular cyst of the kidney is extirpation of the sac by dissection, and immediate closure by sutures of the renal wound. This method, it is held, is as radical in character as nephrectomy, promises to be less dangerous than this operation, and is certainly less difficult in its performance. A single and unilocular renal cyst is almost invariably a benign growth. The inner surface of the sac is not lined by any active or vegetating epithelium, and in this respect the single cyst differs from the growths met with in polycystic disease of the kidney. The unilocular growth rarely affects the pedicle or the peritoneal surface of the kidney, and is usually met with at one of the extremities of the organ. In dealing with objections that might be brought against the method Tuffier states that though hæmorrhage from the incised renal parenchyma is usually very copious it may be readily arrested by gentle pressure. During dissection of the sac and approximation of the raw surfaces of the kidney by sutures he would have the pedicle compressed by an assistant, and thus be able to complete his operation with very little loss of blood. Extirpation of the cyst alone is not likely to be followed by a fistula.

Palpation of the Kidney.—Israel's[6] method of palpation is a very satisfactory one. A line parallel with the middle line of the abdomen is drawn from the middle of Poupart's ligament to the margin of the ribs. The finger-tips placed two finger-breadths below the margin of the ribs, and upon this line, are directly over the lower extremity of a kidney in place. In order to feel this kidney we must avoid poking with eager hooked fingers, or the abdominal muscles will contract in resentment. The tips of the straight extended fingers are placed upon the point indicated while the patient lies supine, with flexed legs, upon a hard bed or table. The other hand now lifts the loin gently towards the opposed fingers. At each expiration of the patient's breath the fingers upon the abdomen are pressed a little farther toward the kidney, and the impressions of touch kept well in mind. It is not long before the fingers easily recognize the object sought for. If the patient now takes a full breath, a wandering kidney will be forced far under the finger-tips, and in this particular patient it is forced entirely past them, as a grape pops out of its skin.

Guyon finds the kidney by approaching it as Israel does, and then, by sharp pressure of the fingers in the loin, causes spasmodic contraction of the quadratus lumborum muscle and a consequent bumping of the kidney against the fingers upon the anterior abdominal wall.

We can often distinguish a moving kidney from a moving distended

gall bladder by the arcs of the circles which the two describe about the fixed points of their respective radii.

REFERENCES.—[1]"Medical Chronicle," p. 267, July, 1891; [2]"Proceedings Royal Med. Chir. Soc.," Jan. 7, 1891; cp. "Lancet," p. 144, Jan. 17, 1891; "Practitioner," Feb., 1891. [3]Ibid., "Lancet," Jan. 17, 1891, page 144. [4]"Lancet," p. 145, Jan. 17, 1891. [5]"Arch. Gen. de Med.," July, 1891; Supp., "Brit. Med. Journal," July 25, 1891. [6]Dr. Robert Morris, "New York Medical Journal," April 4, 1891.

Synopsis.—(Vol. 1890, p. 338.) In renal colic, ℞ Antipyrin 15 grammes, Bicarbonate of Sodium 5 grammes; divide into 30 powders; take 1 or 2 in the middle of meals. **Buffalo Mineral Water**; exclusive use of **Distilled Water** in all beverages.

(Vol. 1891.) **Armeria Vulgaris Infusion** as diuretic in catarrhal affections of kidneys (p. 12). **Diuretin**, 6 grammes daily in gramme doses as diuretic (p. 26; also **Rubus Chamæmorus** infusion, 5 or 6 teaspoonfuls daily (p. 50).

LABOUR.

A. H. N. Lewers, M.D.

Cocaine in Midwifery.—Dr. Bousquet[1], of Marseilles, records a series of cases of labour in which **Cocaine** was employed. In some of these a plug soaked in a 5 per cent. solution of cocaine was placed against the cervix; in others the solution was injected into the labium majus about ten minutes before the expulsion of the head was expected.

Dr. Bousquet and others have also successfully used cocaine ointment as an analgesic in labour. A 4 per cent. ointment was used. Patients on whom cocaine is being used must not be allowed to sit up, nor should it be employed where there is marked anæmia.

Dr. Tarnier[2] speaks highly of a 5 per cent. solution of **Sulphate of Copper** as an antiseptic for washing out the vagina and uterus after labour. Its advantages are that it is cheap, very soluble, very active as an antiseptic, and not poisonous, or at least very much less so than corrosive sublimate solution. A 5 per cent. solution is approximately of the strength of 20 grains to the ounce of water.

Placenta Prævia.—Professor Trent[3], of Leyden, records thirteen cases of placenta prævia treated by bipolar version with a loss of only one patient. This death was, however, probably caused by a midwife who had introduced a dirty sponge into the vagina before version was performed. The practice is, to be content with performing version and not to proceed to extraction unless further hæmorrhage occurs. The latter part of the labour continuing slowly, there is less risk of post-partum hæmorrhage.

Resuscitation of Still-born Children.—Dr. Lusk[4] read a paper on

this subject at a meeting of the New York Academy of Medicine in December, 1890.

He advocated the intelligent and persevering application of known methods, and, as an illustration, mentioned a case where only after three hours were respiratory movements established. He laid special stress on clearing the respiratory passages by suction, a No. 8 English catheter being passed into the trachea, if necessary several times. There was no danger in aspirating the lungs in this way. Direct inflation by the same means was also of great value. Immersion in warm water, followed by sprinkling of cold water on the epigastrium, was also of service. He also advocated both Schultze's and Sylvester's methods of performing artificial respiration. He considered the former of special value for unloading the congested heart-cavities and vessels of the thorax.

Induction of Labour.—At the International Medical Congress last year considerable attention was given to this operation. Dohrn reviewed the history of the operation. It is now generally recognized that in order to make a fair estimate of the value of the induction of premature labour for contracted pelvis, the results of labour at full term and induced premature labour must be compared *in the same person.*

Dohrn mentioned a series of cases in this category. The results show clearly the great value of this operation in saving infant life. Two hundred and seventy-one cases of induced premature labour for contracted pelvis showed 60 per cent. of living children who were kept alive. In the same patients one hundred and seventy-one labours at term showed only 29 per cent. of living children.

As regards the maternal mortality in cases of the induction of premature labour for pelvic contraction, it may be taken at about 5 per cent.

Leopold has had seventy-five cases of induced premature labour, with only one death. Children born before the thirty-fourth week can rarely be kept alive under ordinary conditions. The results as regards the children may be expected to improve when we can make a more accurate determination as to when this period of pregnancy has arrived.

He also pointed out that Cæsarean section and induced labour are not in competition with one another, but rather that Cæsarean section begins at the limit where induced labour ends, *i.e.*, where it is impossible for the induction of labour to result in the birth of a living child that will survive.

As regards flattened pelvis, the limit below which induction of

labour is useless is 7 to 7·5 cm. Below that limit it becomes a question of craniotomy or Cæsarean section.

In the justo-minor pelvis the limit mentioned is raised to 8·5 cm.

Dr. Schrader[5] reports a series of cases in which he induced premature labour by vaginal douches of hot and cold water alternately. By means of a T-shaped tube and india-rubber tubing connected with two irrigators, douches can be given at will of either hot or cold water. Twenty-four litres of cold water, and twelve of hot water at 112°, are used each time. The warm douche is given first to the amount of about a litre, and, after pressing the vaginal tube backwards so as to allow all the hot water to escape, the cold current is turned on, about two litres of cold water being allowed to flow, and so on till the whole quantities mentioned have been used. The sudden change from warm to cold is the chief point. In eighteen cases mentioned the method appears to have been successful in inducing labour. The average number of douches required was ten and a half, but three douches and a half were sufficient in nine of the cases.

Cæsarean Section as a Substitute for Craniotomy.—The improvements in the method of performing Cæsarean section that have been introduced within the last few years have led to the operation having at the present time a greatly decreased mortality, as compared with that of, say, twenty years ago. Then the mortality was in the neighbourhood of 80 per cent., now, while it is difficult to state its mortality numerically, it probably has been reduced to a fourth of that percentage, and in certain hands even considerably lower. This being so, it is natural that the operation should be determined upon with much less reluctance than formerly, and indeed there appears to be some danger that it may even be undertaken too readily. For when all has been said, Cæsarean section still remains a very dangerous operation, and it is certainly more dangerous than craniotomy in the great majority of cases, if performed by a competent operator, with due regard to strict antiseptic principles.

Dr. Murdoch Cameron[6] has published ten cases in which he performed Cæsarean section for contracted pelvis. Only one of the mothers died, and all the children were saved except one that had been dead some hours before the operation. Dr. Cameron's mortality, therefore, has so far been 10 per cent., a very satisfactory record; but unfortunately at present it must be looked upon as representing an exceptional degree of success rather than what may be usually expected, at all events among obstetricians generally. There are certain practical recommendations as to the details of the operation in Dr. Cameron's paper that deserve very careful attention. The first,

and perhaps the most important, is as to his method of preventing hæmorrhage as the uterus is being incised. His plan is to place a finger against one cut surface while his assistant does the same on the other side. Another point is to make only a small uterine wound till the membranes are reached, and then to extend it, carefully keeping the membranes intact up to the last moment. If this is done, the uterine incision needs to be less extensive than if the membranes are prematurely ruptured.

After the fœtus is extracted, the cut edges of the uterus are pressed together and the uterus manipulated, and the same is done after the placenta has been removed.

Dr. Cameron does not use so many sutures as are generally recommended by Sänger and others. From seven to twelve deep sutures he considers sufficient, and he only uses superficial sutures where these seem specially required.

Dr. Cameron does not use the temporary elastic ligature round the cervix to prevent hæmorrhage, partly because it seems to cause inertia of the uterus in some cases, and partly because the measures already described are sufficient for the purpose.

Cæsarean Section (*Recent Statistics of*).—Dr. Cameron's cases have just been referred to, showing a mortality of 10 per cent.

It may be useful here to quote other recent statistics of this operation, given at the International Medical Congress at Berlin, as mentioned by Sänger :—

Schauta	15 cases,	with no death.	
Leopold	42 „	„	4 deaths.
Zweifel	27 „	„	1 „
Sänger	7 „	„	0 „
Another operator	6 „	„	0 „

Both Leopold and Sänger protested against the performance of Cæsarean section in private practice, the protest no doubt referring not so much to the operation being done in private practice, as to its being done by those without the special experience and surroundings necessary to give the operation a fair chance of success ; and we may add that nothing can be more misleading than to take the present mortality of, say, Leopold and Sänger, who have had great experience in the operation, and use that as an index of the risk to be encountered by a patient submitting to the operation at the hands of an operator who has had, to say the least of it, far less experience than the operators above-named.

REFERENCES.—[1]Supplement, "Brit. Med. Journal," April 11, 1891; [2]"Therapeutic Gazette," June 15, 1891 ; [3]Supplement, "Brit. Med.

Journal," Jan. 17, 1891 ; [4]"Med. Record," Dec. 13, 1890 ; [5]"Lancet," March 21, 1891 ; [6]"Brit. Med. Journal," March 7, 1891.

Synopsis.—(Vol. 1891, p. 307.) Plugging of uterus with Antiseptic Gauze for post-partum hæmorrhage, also hypodermic injections of 6% Common Salt solution.

Newbouldia Lævis fluid extract, ♏15 to 60 (p. 42).

LACHRYMAL FISTULA. (See "Eye.")

LARYNGISMUS STRIDULUS.

Synopsis.—(Vol. 1890, p. 340.) Antipyrin, gr. ij hourly, for a time, and then every two hours.

LARYNX (Diseases of). *P. Watson Williams, M.D., Lond.*

Intubation.—Dr. Walter Carr[1] reports a case of ulceration of the trachea produced by intubation in a child of two years, by a tube which was in the larynx only four days.

Egidi[2] criticises the intubation tube of O'Dwyer as being too long and narrow, and on account of its being closed by the obturator when introduced. He employs a shorter and wider cannula and a hollow obturator, and alleges for this combination certain advantages, the main one of which is that the respiration of the patient is not interrupted by the introduction of the cannula.

Dr. Lefferts[3] maintains that intubation offers, in a large proportion of instances, the simplest and most practical means yet devised for relieving the dyspnœa of acute laryngeal stenosis, thus avoiding tracheotomy ; and for dilating chronic cicatricial stricture, in its varying grades and forms, thus dispensing with the temporary or permanent necessity of wearing a tracheal cannula. He divides into the following seven classes the cases in which the procedure is indicated : (1,) The immediate relief of dyspnœa in all cases of acute syphilitic stenosis ; (2,) Facilitating or hastening, by equitable and prolonged pressure, the absorption of inflammatory effusion or induration ; (3,) Forcible dilatation and continuous distension of slight and recently organized cicatricial bands ; (4,) Progressive dilatation, by means of a series of intubation-tubes, of cicatricial strictures of the larynx, subsequently to their incision, by some form of cutting apparatus ; (5,) Divulsion and progressive dilatation by such specially adapted intubation-tubes as may be required ; (6,) In dyspnœa due to abductive immobility of the vocal cords, from fixation of the arytenoid joints by disease within or around them, well-directed pressure by the intubation-tube will exert a favourable influence in promoting absorption, or will finally break down the fixation of the joints ; (7,) In dyspnœa dependent on abductive paresis, from commencing degenerative processes of syphilitic origin in the abductive muscles themselves, the

presence of the tube will stimulate normal physiological movement by preserving the respiratory opening. In any case, there are certain difficulties in intubing adults not met with in children. The depth at which the larynx lies in the adult makes it difficult or impossible to guide the tube over the epiglottis with the finger. This is especially true where a tracheotomy-tube has been worn for some time, and the inactive larynx does not rise to meet the finger.

Laryngitis in Vocalists.—A valuable contribution by Dr. S. W. Langmaid[4] on hoarseness and loss of voice, caused by w ong vocal method, invites attention to a subject which is ill-understood by medical men generally, and seeks to explain the difficulty encountered in relieving the condition. This class of case most frequently presents itself in persons learning singing. The patient complains of fatigue, followed by loss of the high notes and hoarseness of the speaking and singing voice, with the objective signs of naso-pharyngitis, catarrhal laryngitis, and paresis of the vocal cords upon attempted phonation, with defective tension. This Dr. Langmaid believes is generally due to the attempt to depress the tongue during phonation, which causes tension of the posterior, and especially of the anterior, pillars of the fauces, and the isthmus is thereby narrowed. The epiglottis is bent backwards, and held down in a constrained position. To hold the tongue flat for such vowels as are *naturally* produced with a lower position of the tongue and larynx, *a* and *u* (Italian), is to prevent the free action of the muscular adjustments necessary for every note of the scale successively. The constrained, unnatural position of the pharyngeal muscles will account for the catarrh.

Dr. R. B. Faulkner[5] discusses the best method for the rapid relief of acute laryngitis, especially in the case of public singers, where it is often of importance to enable them to meet engagements. The point to which he draws attention is that **Strychnine** in large doses will restore the voice for temporary use with greater certainty than can be accomplished by any other means. He begins treatment in the usual way with a laxative. Then his habit is to use a 1 per cent. spray of **Cocaine**, accompanied by **Aconite** and **Aromatic Spirit of Ammonia** internally, and the use of a lozenge, several times daily, of the following formula :—

℞ Morphinæ Bimeconat.	gr. $\frac{1}{100}$	Cocain. Hydrochlorate	gr. $\frac{1}{125}$
Tinct. Aconiti	♏ $\frac{1}{6}$	Rad-althææ Rad.	gr. $\frac{1}{2}$

If under this treatment the more acute symptoms have subsided, then the effects of strychnine in restoring tone will be prompt and brilliant. In the morning of the day on which the patient is to sing, the $\frac{1}{60}$ of a grain of strychnine should be taken after breakfast,

the same after the noonday meal, and in the evening, after dinner and before departing for the concert, $\frac{1}{30}$ of a grain. This for an adult man. He has had very gratifying results from this treatment in many instances. At the same time, the above-mentioned dose of strychnine is only advised in emergencies.

He remarks that the habit of drinking wine of any kind is always ruinous to the singer's voice. "Drink no wine," says Madame Adelina Patti. He quotes Mr. Lennox Browne as strongly denouncing the wine habit, and Sir Morell Mackenzie, who has written that "it must follow as the night the day, that want of steadiness—*i.e.*, want of adequate co-ordinative power over the laryngeal muscles, slight at first, but gradually increasing—will ensue."

For irritability of the vocal cords from overuse, Dr. Solis Cohen advises the following prescription :—

℞ Tr. Benzoini Comp.		Aquæ Ferv.	q.s.
Tr. Opii Camphor.	āā f℥ss		

M. Sig.—Use as a gargle, and direct the patient to use the vocal cords as little as possible.

Tuberculosis of the Larynx.—The surgical treatment may be referred to three stages : (*a*,) Antiseptic applications of **Creasote, Menthol,** and **Oil of Almonds** to the laryngeal cavity for many days before intervention ; (*b*,) Surgical intervention. Manual operation, performed upon the patient fasting. Local anæsthesia is first obtained by cocaine. Either the cutting forceps or the punch may be used, and by these specially constructed instruments the growths may be removed ; (*c*,) After the operation the bleeding surface is dusted with iodoform powder by an insufflator, and the same is repeated in the evening. Absolute silence is enjoined, ice and iced fluids being given.

Next day, and for three days after, on each morning, an injection is made with the syringe of creasote and menthol oil, the patient remaining under observation.

The operation may have to be repeated as many as four times.

Immediately after the operation the patient feels an amelioration of the symptoms.

Of absolutely new treatment in laryngeal tuberculosis there is little of real value.

Tuberculin.—We very briefly alluded to the results of Koch's inoculation of tuberculin in the last issue of the "Medical Annual." Since then the reports of cases treated have been sufficient to form a definite opinion as to its value.

It will be convenient first to refer to other general methods of treating the disease in question before passing on to the only really

satisfactory method, viz., the local treatment of Krause and Heryng, to which we shall refer fully and give details as to its practical application. The reports from various laryngologists show that of a very large number of cases of laryngeal tuberculosis treated, a large proportion, about 50 per cent., were temporarily improved ; but very few indeed were cured.

Cantharidinate of Potash[6].—The treatment of general tuberculosis by this and other methods is elsewhere referred to.

The results obtained by several observers show that the treatment is by no means devoid of danger, and that it is extremely doubtful whether the beneficial effects reported by some of the Berlin experimenters were really attributable to the remedy.

Gibbes-Shurly Treatment.—This consists in the hypodermic injections of iodine and chloride of gold and sodium, and the inhalation of chlorine gas. The method does not seem encouraging, although the cases reported seem to have been satisfactory.

Aniline Dyes, Fuchsine, and Pyoktanin.—Dr. Karl G. Bogroff[7], of Odessa, points out (on the ground of his own observations since 1888) that : (1,) **Fuchsine**, like all other aniline dyes, is easily absorbed by the laryngeal and faucial mucous membrane ; (2,) Antiseptic fluids, when mixed with fuchsine, penetrate into the tissues far more deeply and act much more effectively than when employed alone ; (3,) When injected into the larynx, "the superficial cellular elements and intercellular spaces become infiltrated with particles of the aniline dye, and thus a thin protective film is formed, which is impermeable not only by any irritating fluids, but even by gaseous bodies ;" (4,) In cases of reactive laryngeal inflammation arising in phthisical patients from constant irritation by the pulmonary discharge, the intralaryngeal injection of a 2 per cent. watery solution of boracic acid, saturated with fuchsine, rapidly removes the inflammatory phenomena and relieves difficulty in swallowing, etc. ; (5,) Fuchsine proves similarly beneficial in cases of "faucial mycosis." The author cites the case of a medical man suffering from that affection in whom local irrigations with a 1 per 1000 corrosive sublimate solution mixed with the dye quickly brought about a complete cure, after energetic antiseptic treatment by the ordinary methods had utterly failed.

Pyoktanin, or Methyl Blue, has seemed to assist in the healing of tubercular ulcers on the vocal cords in some of our cases, but the results of all local applications are more or less unsatisfactory.

Local Treatment of Tubercular Laryngitis.—The treatment that is advocated by the majority of laryngologists is that introduced by Heryng, of Warsaw, and advocated by Krause, of Berlin. This is the

use of lactic acid combined with curettement, to which we referred in the "Medical Annual" for 1890. The matter, however, is one of such great practical importance that we must return again to the discussion of these methods, which have formed the subject of several important communications during the last few months.

Dr. Bronner[8] divides cases of tubercular laryngitis into two classes. (1,) Those cases which are prevalent in the early stages of pulmonary phthisis, where there is a peculiar anæmic condition of the whole mucous membrane of the larynx, a slight paresis of the laryngeal muscles, and a peculiar and persistent catarrh of the vocal cords; (2,) Those cases where there is infiltration, perichondritis, and ulceration. Where there is only an anæmic condition present, hot inhalations with oleum pini sylvestris or eucalyptus can be used, together with general tonic treatment. In cases of paresis of the adductor muscles, the local application of a 5 to 10 per cent. solution of nitrate of silver often relieves the symptoms. In the treatment of catarrh, the local application of a 2 to 10 per cent. solution of nitrate of silver, or of 5 to 10 per cent. of chloride of zinc, seems to act very well. In severe cases of infiltration the author considers that the only rational mode of treatment is to make free incisions into the affected parts with a knife or scissors, but this plan is not recommended by all laryngologists. Where there is ulceration, either of the vocal cords, the false vocal cords, or of the inter-arytenoid region or epiglottis, the most efficient and reliable treatment is the application of lactic acid. One begins with a 20 per cent. solution, gradually increasing the strength to 80 or 90 per cent. It should be applied by means of cotton wool on a silver probe, and must be well rubbed into the affected parts. Cocaine should be applied before and after the application, in order to prevent any pain or subsequent swelling. Some observers prefer menthol to lactic acid, but the author does not think the former affects the ulceration so readily as lactic acid. After the application of the lactic acid, it is a good plan to use some iodoform, in the form of insufflation. In advanced cases, where local applications fail to cure the ulceration, it is usual to resort to surgical treatment. The only effectual way to treat these cases is to scrape thoroughly with a sharp curette. Since the introduction of cocaine, quite a revolution has been effected in the treatment of laryngeal disease; there is now no difficulty in applying local treatment to almost any part of the larynx without giving the patient pain. As a last resource, in cases of severe laryngeal ulceration, when local treatment fails, and the lungs are fairly healthy, the author strongly recommends early tracheotomy, though it is seldom that patients will consent to it.

Dr. Bronner's cotton-wool holder (*Fig.* 14) for the application of lactic acid to the larynx is very similar to the ordinary laryngeal probe. The end (*a*,) is screw-shaped, and made of silver. The stem is rather thick, so that it does not easily bend. The handle (*c*,) is made of wood, and can be screwed off, so that we can thoroughly disinfect the stem in boiling water or some strong antiseptic. The whole of the holder can also be made of aluminium. The advantages of this holder are : (1,) That the cotton-wool can be screwed on and off very easily ; (2,) That we can regulate the thickness and length of the cotton-wool to suit each individual case (we can thus carefully localize the application of the acid, and also get at those diseased parts which lie in the vertical plane) ; (3,) That we can easily disinfect the holder ; and (4,) That it is very simple and cheap. The ordinary camel's-hair brush is much too large, and the stem too flexible, so that the application of the acid cannot be properly localized, or energetically enough carried out. The cotton-wool holder of Heryng has the great disadvantage that part of the cotton-wool is covered by the metal sheath, so that we cannot easily get at those parts which lie in the vertical plane. It is also often very difficult to remove the cotton-wool from the loop after use. The holder is made by Messrs. Down Brothers, St. Thomas's-street, London.

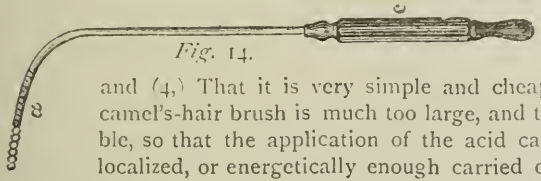


Fig. 14.

The strength of the lactic acid solution must be varied to suit the given case. From 20 per cent. to 50 per cent. is usually well tolerated, and is sufficient for the purpose. Indeed, Krause believes that the effect of the solutions mentioned above is as energetic as that of the pure acid, while decidedly less irritating in sensitive cases. Some patients, however, seem to suffer much more than others under it, and it may be necessary, in exceptional cases, to reduce the strength of the solution as low as 10 per cent. As a rule, the acid is not as well tolerated by the larynx as it is by the pharynx. Careful rubbing of the acid into the surface of a laryngeal ulcer, dispensing with the scraping process, will in many cases give excellent results.

Mr. Charteris Symonds[9] very aptly suggests that our objects in operating are : (1,) To relieve the cough and dysphagia, and so to bring about improvement in the general health, enabling the patient to swallow ; (2,) To diminish the liability to pulmonary affection ; (3,) To produce a more rapid recovery in those cases disposed to a spontaneous cure, much as is done in tubercular disease of the joints. He holds that the cases most suitable for operation are : (1,) Those in which

there is no evidence of pulmonary disease ; (2,) Those in which there is severe dysphagia and cough, with existing, but not rapidly advancing, pulmonary disease ; (3,) Those in which the pulmonary disease is early or chronic, as in these the latter may improve.

He concludes that : (1,) Tubercular disease of the larynx should be treated on the same lines as elsewhere, that is, by destroying it by an irritant or removing it by erasion or curettement ; (2,) At present lactic acid is our best application; (3,) Endo-laryngeal methods are sufficient to remove and treat the disease in a majority of cases.

REFERENCES.—[1]"Lancet," March 21, 1891; [2]"Reforma Med.," Jan. 5, 1891 ; "New York Med. Jour.," June 20, 1891 ; [3]"London Med. Record," Nov. 20, 1890 ; [4]"New York Med. Record," Oct., 1890 ; [5]"New York Med. Jour.," April 11, 1891 ; [6]"Therap. Gaz.," April 15, 1891 ; "Berl. klin. Woch.," No. 9, 1891 ; Suppl., "Brit. Med. Jour.," May 2, and Aug. 15, 1891 ; "Vratch," No. 17, 1891, p. 434 ; "Gazetta Med. Lomb.," May 9, 1891 ; "Jour. des Connaisses Méd.," April 16, 1891 ; [7]"Vratch," No. 16, 1891, p. 411 ; [8]"Lond. Med. Rec.," Sept., 1890 ; [9]"Jour. of Laryng.," Oct., 1890.

Synopsis.—(Vol. 1891, p. 309.) ℞ Phenol, gtt. 2 ; Distilled Water, ℥j. Dissolve and add **Cocaine Hydrochlorate, gr. 10.** For local use to avoid toxic action of cocaine.

LEAD POISONING. *Frank J. Wethered, M.D.*

M. Lavrand advises the administration of the **Iodide of Iron Pills,** either alone or associated with **Phosphide of Zinc,** as a preventive of lead poisoning. The author found that under this treatment, even though the patients continued to ply their trade, the general health improved and the amount of hæmoglobin in the blood increased.

REFERENCE.—"Therapeutic Gazette," March 16, 1891.

LEPROSY. *T. Colcott Fox, M.B.*

There is a mass of literature dealing with this disease, but not much that is important to be recorded about the treatment. **Chaulmoogra Oil** is now largely used in Europe, and often brings about much amelioration of the symptoms.

Koch, acting for Beavan Rake, analyzes the results of treatment by this oil during six months, and arrives at the following conclusions, summarized in the "British Medical Journal" :—

(1,) The action of chaulmoogra oil in causing the absorption of tubercles is uncertain and variable ; (2,) Its action in reducing anæsthesia is also very uncertain. Among his cases not one was improved in this respect ; (3,) Its most certain action is that of allaying the neuralgic pains in the limbs and joints ; (4,) Under its use super-

ficial ulcerations heal up rapidly, and sometimes perforating ulcers ; (5,) During its use there is a great improvement in the physical condition of the patient. How much of this may be due to the coincident beneficial effect of regular meals and disciplined life is difficult to say ; (6,) There is much difficulty in its administration, owing to the nausea it causes. Rather more than 50 per cent. of the patients had to give up taking it on this account, and used it by friction ; (7,) Dose : He generally begins with 10 minims three times a day, and pushed it rapidly. In some cases he began with 30 minims. Those who were able to retain this dose showed rapid improvement in physical condition ; (8,) Length of administration : This should be prolonged to effect any good. Its persistent continuous administration is the only way to secure any benefit in the graver and characteristic lesions ; (9,) Mode of administration : Usually in the pure form. May be given as an emulsion, in which it is easier tolerated. Mixed with cocoanut oil or other bland oil it is used for application by friction.

Arsenic has been found in the author's hands to do good in some cases. Salol, which has been praised by some authorities as being useful in leprotic fever, has not met with any success at his hands.

E. Vidal has also obtained good results at the Hôp. St. Louis by *large* doses of chaulmoogra oil, but it is not always well borne. He now gives **Gynocardic Acid,** prepared by Roux's process, and it causes neither constipation, malaise, nor nausea. He can give 3 grammes daily, which represents 17 grammes of chaulmoogra oil. Two to 5 capsules of 30 centigrammes each can be given before eating, or from 5 to 20 of the following pills :—

℞ Gynocardate of Magnesia 4 gr. | Ext. Gentian 1 gr.
M.Ft. pil. xx.

Or 10 to 20 capsules of 20 centigrammes each of gynocardate of soda daily.

The other important therapeutic agent which has been tried is **Kochine** or **Tuberculin.** Numerous cases have been reported, but it is too soon to draw any definite conclusions. In many cases there is a reaction with important differences from that seen in tuberculosis, and improvement has been reported in some instances. It is important to see that there is no existent tuberculosis.

REFERENCES.—Report on Leprosy and the Trinidad Leper Asylum for the year 1890 ; " Jour. Cut. and Gen. Ur. Dis.," Aug., 1891 ; "Jour. of the Leprosy Committee."

Synopsis.—(Vol. 1890, p. 344.) Gurjun Oil Emulsion internally and externally with a generous diet ; Chaulmoogra Oil as a dressing to the sores, and 6 grains of the seeds beaten into a pulp three times daily internally.

LEUCORRHŒA.

Synopsis.—(Vol. 1890, p. 345.) In young people, **Quinine** and **Iron** (Quin. Sulph. gr. ½, Liq. Ferr. Perch. ♏x), or **Arsenic** internally; occasionally an **Astringent Injection** may be necessary; in later life different causes and treatment present.

(Vol. 1891, p. 7.) **Aerocomia Sclerocarpa** as astringent.

LEUKOPLAKIA ORIS.

Synopsis.—(Vol. 1890, p. 345.) As a caustic the concentrated solution of **Chromic Acid** in water is best, or superficial **Cauterization** by the Paquelin cautery may be used, and a weak solution of **Chromic Acid** or **Nitrate of Silver** applied subsequently to the peeling surfaces; local application of pure **Balsam of Peru**.

(Vol. 1891, p. 319.) **Chromic Acid** for patches; **Nitrate of Silver** and **Iodoform** for fissures. In mild cases continuous use of **Borax** as mouth wash. **Balsam of Peru** relieves pain and promotes healing of denuded patches. **Cauterization** by Paquelin's cautery, followed by a **Borax** mouth wash. ℞ Sodæ Biboratis, 8·0; Aq. Destill., Aq. Menth. Pip. āā 100·0, and at night the burnt patches are painted with Nitrate of Silver, 2 or 3%.

LICHEN. *T. Colcott Fox, M.B.*

Jamieson records a case of lichen planus in which a cure was effected by **Tartrate of Antimony**, gr. ¼, every four hours for a week, and then three times daily.

REFERENCE.—"Brit. Jour. of Derm.," Sept., 1891.

Synopsis.—(Vol. 1891, p. 320.) **Arsenic**, and if this fails, **Tartarized Antimony**, gr. ¼, and **Nepenthe**, gtt. 12, every four hours.

LIVER (Surgery of). *A. W. Mayo Robson, F.R.C.S.*

Resection.—During the past year partial resection of the liver has been performed at least three times with success; once by Tausini[8] for hydatid cyst, once by Terrillon[9] for numerous small hydatid cysts, and once by Lücke[7] for cancer. In the two last cases removal was effected by the elastic ligature, in the first by the knife.

Several cases have been previously reported where portions of the liver were removed, either for hernia of the organ through a penetrating wound or by laparotomy for extirpating hepatic tumours. Out of ten instances of the former, the greater number recovered; of six cases of the latter, I believe five recovered, one case being attended by fatal hæmorrhage, which may, however, be prevented by the use of the elastic ligature.

Abscess.—We are decidedly in favour of incision and drainage in the treatment of hepatic abscess, and can bear out Defontaine's[3] statements that suture of the liver is easy and efficacious if soft material, such as silk, be used, and if Glisson's capsule be included in the suture.

In a case of liver cyst, "not hydatid," that we had recently to open

and drain, we found that sutures applied in this way were most effectual in preventing peritoneal extravasation, as although on account of hæmorrhage it was necessary to plug over and over again with antiseptic gauze, and lastly with perchloride of iron, there was an entire absence of peritonitis, and the case pursued a favourable course.

Surgeon Morris[5], A.M.D., however, prefers to aspirate liver abscesses, repeating the operation from time to time as required. He, nevertheless, remarks that there should be no doubt that adhesion has taken place between the outer wall of the abscess and the parietes. This is, of course, not necessary in incision, as the surgeon can effectually shut out the peritoneal cavity.

Hydatid Cysts.—We also prefer incision and drainage in hydatid disease, but that drainage is not always necessary Mr. Thornton[6] has proved. Dr. Eastes[4] suggests that after removing the cyst contents the opening should be closed with the same sutures as are used to close the parietal incision until further experience shows this to be unnecessary. A case of Mr. Bond's[2] proves that drainage may often be dispensed with. Mr. Handford[1] remarks that he is strongly in favour of aspiration in the first instance, as many cases are cured by a single tapping. He prefers to take away as much fluid as will readily flow.

REFERENCES.—[1]H. Handford, "Lancet," July 4, 1891 ; [2]C. J. Bond, "Brit. Med. Jour.," April 11, 1891 ; [3]Defontaine, "Med. Chr.," Jan., 1891 ; [4]Thos. Eastes, "Brit. Med. Jour.," May 9, 1891 ; [5]Morris, Surg. H.A., "Lancet," July 25, 1891 ; [6]Knowsley Thornton, "Lancet," March 7, 1891 ; [7]Lücke, Suppl., "Brit. Med. Jour.," May 7, 1891; [8]Tausini, Suppl. "Brit. Med. Jour.," Feb. 7, 1891; [9]Duplay for M. Terrillon, Suppl. "Brit. Med. Jour.," Feb. 7, 1891.

Synopsis.—(Vol. 1891.) **Casearia Esculenta Extract**, gr. 20, in chronic enlargement of liver and obstruction (p. 18). **Chloralamide**, gr. 30 to 45, as sedative in biliary colic (p. 21); **Dioscorea Villosa** fluid extract, gtt. 10, hourly in biliary colic (p. 25); **Rubus Chamæmorus Infusion**, 5 or 6 teaspoonfuls daily as diuretic in hepatic cirrhosis (p. 50).

LOCOMOTOR ATAXIA.

Synopsis.—(Vol. 1890, p. 351.) Suspension method contraindicated in great debility, emphysema, pulmonary phthisis, atheroma of arteries, diseases of the heart, and probably nervous diseases associated with muscular spasm and rigidity.

(Vol. 1891, p. 329.) In syphilitic cases, **Mercurial Inunction** and large doses of **Iodide of Potassium**. In non-specific cases, **Galvanization, Rest, Iodide of Potassium, Nitrate of Silver**, and **Faradic Brush** may give some help.

LUNG (Surgery of). *F. de Havilland Hall, M.D.*

M. Tuffier[1] presented to the Société de Chirurgie a patient on whom he had practised excision of the summit of the right lung for localized tuberculosis. The *modus operandi* was as follows: A cushion being placed under the back so as to efface as much as possible the subclavicular fossa, an incision was made through the second intercostal space to within half an inch of the sternum, the great pectoral and the intercostal muscles were similarly incised, and the pleura brought to view, which being cut in turn, the tissue of the lung appeared. The operator then passed in his finger and detached the serous membrane above and without with comparative ease, but when he reached the inside the membrane yielded, and immediately a hissing sound occurred, indicating an escape of air or the formation of a pneumothorax. The finger was applied to the spot, and subsequently a plug of iodoform gauze. Continuing the operation, M. Tuffier passed his finger behind the summit of the lung, and, seizing the tissue with a special flat forceps, drew it forward, threw a ligature around it, and fixed the pedicle to the periosteum on the internal side of the second rib. The muscles were then sutured, and the wound dressed with iodoform. The piece resected was examined, and in its centre was discovered an induration of about the size of a small walnut, and surrounded with tubercles, in which bacilli existed. The man made a rapid recovery, and a minute auscultation of the lung showed that the respiratory murmur, although a little weakened, was present throughout the whole organ, without revealing the slightest sign of a pleural effusion.

Professor Sonnenburg[2] reports five cases in which he opened pulmonary cavities from the outside as a preliminary to treatment by injections of tuberculin.

Dr. E. Leser[3], of Halle, reports two more. One of these was a female, aged forty-three, who had had symptoms for four years, and presented physical signs of excavation at the left apex. The operation consisted in making an incision in the first intercostal space seven centimètres long, and, after dividing the muscles and securing blood-vessels, introducing a trocar in the direction of the cavity. Then an aperture was bored through the layer of tissue overlying the cavity by means of a Paquelin's cautery, the trocar being taken as a guide. The cavity was the size of an apple, had somewhat irregular walls, and was coated with flakes of inspissated pus and caseous matter. These were removed, and the cavity stuffed with antiseptic gauze. The patient was treated with "tuberculin," injected subcutaneously and also into the cavity. The patient improved much under treatment, and the cavity contracted to half its former size. Dr. Leser makes

it a *sine quâ non* that the costal and pulmonary pleura should be firmly united, as they usually are when cavities are of some standing ; and he lays stress upon having a fairly large incision through the thoracic wall, but not a very large aperture made in the lung, since this will be sure to increase by sloughing. The external opening gives immediate relief to cough and expectoration.

Professor Caselli[4], of Genoa, has operated on two cases under the care of Professor Maragliano.

Dr. Hagen-Thorn[5], of St. Petersburg, records the case of a man, aged thirty-two, in whom, about a month after an attack of croupous pneumonia, there appeared fever of a septicæmic type, cough with blood-stained purulent expectoration, offensive breath, and dulness over the left lung. A trocar plunged into the chest between the fourth and fifth ribs struck a suppurating cavity, situated some 6 centimètres from the anterior thoracic wall. Without delay a free incision was made in the fourth interspace, the sloughing cavity opened and thoroughly disinfected, a drainage tube inserted, and the external wound closed with sutures. On the fourth day the sutures were removed ; on the sixth the incision was healed everywhere, except at the site of the drain tube ; on the twenty-sixth the last shred of sloughing tissue escaped. Shortly after the operation the temperature permanently returned to the normal, the patient's general condition gradually improved, the weight increased, etc. When seen about three months after the operation, his general health was excellent, the only remaining symptoms being a little chronic bronchitis.

Dr. Greene[6] has successfully treated a case of abscess of lung, following pneumonia, in a child, aged six. Having located the abscess the aspirating needle was inserted deeply into the lower and anterior axillary region of the lung, and some pus was drawn off. The wound was enlarged by a 2-inch incision made parallel to the side. On inserting a trachea forceps and opening the blades a large amount of pus escaped. Drainage, absorbent dressing, and strict antisepsis completed a perfect recovery a fortnight after operation.

Dr. Hewelke[7] considers that the ordinary measures, such as the administration of turpentine, creasote, or inhalations of carbolic acid, only exert a palliative influence on gangrene of the lung, and he therefore advises, in undoubted cases, a modified surgical treatment by antiseptic injections into the pulmonary tissue.

REFERENCES.—[1] "Medical Press and Circular," June, 1891 ; [2] Supplement "Brit. Med. Jour.," March 21, 1891 ; [3] "Münchener med. Woch," Feb. 24, 1891 ; [4] Supplement "Brit. Med. Jour.," March 21, 1891 ; [5] Ibid., Aug. 8, 1891 ; [6] "Brit. Med. Jour.," vol. i., 1891, p. 18 ; [7] "Allegemeine Wiener med. Zeitung," No. 15, 1891.

LUPUS ERYTHEMATOSUS. *T. Colcott Fox, M.B.*

Brocq recommends the following salves, the former for use in the daytime, the latter at night :—

℞	Acid. Salicyl.	5ss	Zinci Oxidi	5ij
	Acid. Lactic.	5ss	Vaselin pur.	5xvij
	Resorcini	gr 45		
		M. s. a.		
℞	Acid. Salicyl.	1 part	Vaselin pur.	20 parts
	Acid. Pyrogall.	2 parts		

REFERENCE.—Rév. d'Ophthal.," and "Union Méd.," 1890.

LUPUS VULGARIS. *T. Colcott Fox, M.B.*

This disease continues to excite the keenest interest, and its etiology to be carefully studied. Link by link the chain of evidence in proof of its tuberculous nature is being finished. So also every improvement in treatment is keenly followed, and every new antiseptic and parasiticide that promises any good result is eagerly tried.

In a discussion following a recommendation of **Electrolysis** (seven milliampères for seven minutes), considerable dissent was expressed. Whitford finds boring with the **Solid Stick of Caustic Potash** destroys not only lupus tissue, but healthy connective tissue around, and the scars are unnecessarily dense and unsightly, although when skin grafting is done at a suitable stage the results are sometimes excellent. He generally scrapes, then dresses with iodoform, and grafts. **Pyrogallic Acid** treatment and subsequent iodoform dressing require no anæsthetic. *Nitrate of silver boring* is useful for minute patches. Walker, for twenty years at the Liverpool Hospital for Skin Diseases, says, on the other hand, that **Caustic Potash** is the best remedy, and seems to have a special affinity for such lowly organized tissues as lupus and rodent ulcer, through which it marches easily, while it attacks sound skin with comparative difficulty. He denies that it produces unsightly scars, though the pain is sharp. The whole affected surface should be destroyed at once by **Hard Rubbing** with a stick of potassa fusa. Experience tells how deep to go. A day or two of poulticing suffices to bring away the slough (not like a nitric acid slough). Then dress with boric acid ointment. Keep under observation and eradicate recurrences. Large surfaces may be skin-grafted.

Rusin records a remarkably successful case, in which a widespread ulcerative lupus was cured by six hypodermic injections of a 1 per cent. solution of **Chloride of Gold,** in combination with a 1 per cent. solution of **Cyanide of Potassium.** There were no intoxication symptoms on the fourth day.

Coomes had most satisfactory results in two cases from the local

daily application of a 1 in a 1000 solution of **Methyl-Violet,** after cleansing the sores with saline washes and the ten-volume solution of peroxide of hydrogen. Neither case was absolutely cured at the time of writing. Leslie Phillips recommends **Lysol,** applied freely by means of cotton twisted around a probe or wooden match, and allowed to dry on. It is rather painful on ulcerated surfaces. It may be used every day, or every other day, or less frequently, according to circumstances.

De Amicis, of Naples, says **Bals. Peru** favourably influences the reparative processes in lupus ulceration, but does not act particularly on the lupus process. Burbureaux, in *local tuberculosis*, injects subcutaneously, with extreme slowness, deeply, and with a special apparatus, **Oil of Creasote** (1 gramme of rectified creasote mixed with 14 grammes of perfectly pure oil of sweet almonds, olive oil, etc.), 50 grammes daily, and often increases this dose to 100 or 180, or even to 220 grammes at a single time, representing a dose of creasote varying from 3 to 14 grammes. The creasote must be perfectly free from phenic acid. It distils between 200° and 210°, and thus prepared contains chiefly guaiacol and a little creasol. Unna discusses the value of some new remedies. Pure liquefied **Carbolic Acid,** painted on, is very painful for a short time, but a curative agent of the first order. After two to four applications, the crust may be allowed to fall. **Ortho-Meta-** and **Para-Kresole** offer no advantages. **Coal Tar Creasote** has substantially the same action. **Beech Wood Creasote** is not so painful as the phenols, but not so effective, though harmless. **Anilin Oil,** used in sufficient quantities, will destroy lupus nodules, but it is poisonous and unsafe. **Oil of Cloves** attacks also healthy tissue. **Lysol** demands further trial. **Cantharidinates** are being used hypodermically.

Lastly, we may refer to the injection, locally or at a distance, of **Koch's Tuberculin,** or some of its components. There is an enormous mass of literature on this subject, and we will select the conclusions of Unna and Kaposi. In Paris this remedy was condemned. The drawbacks to its use are discussed in another section. Unna recommends the treatment in : (1,) Very extensive multiple cases, since much can be done at once, and all external methods are defective ; (2,) In all forms of lupus fibromas, in particular such as are associated with ectropion of the eyelids or lips, obstruction of nasal passages, contraction of joints, etc. ; (3,) In lupus of the auditory canal and external ear. Such doses are to be administered as are needed to initiate the resorption of the larger masses. Daily washing with warm water, and the application of zinc glycerine jelly, assists. When resorption is in progress, smaller doses can be given, till in many parts

healing has taken place. Then cease this treatment, and employ other well known local measures, such as the micro-Paquelin cautery. Do not use erasion before the Koch treatment, as the recurrences are then apt to be peripheral.

Kaposi's opinion is that Koch's remedy is no curative remedy for lupus, but only an agent similar to all other remedies and ways of procedure, with which one by a judicious selection can always secure fine results, and among which **Kochin** may be classed. He recommends its employment in cases of recent freely proliferating and widely spreading or greatly disseminated lupus, "for there is no other known agent which, like this, injected into any part of the surface, attacks all the foci of lupus, causing them to inflame and flatten down." It is still a subject for our further consideration and investigation in what way and to what extent we can systematically substitute or combine the advantages of the Koch treatment.

In conclusion, we may refer to two excellent reviews of methods of treatment by Dubois-Havenith and Leloir.

REFERENCES.—"Jour. Cut. and Gen. Urin. Dis.," Nov. 1890; Whitford, "Liverpool Med. Chir. Jour.," Jan., 1891; Walker, "Liverpool Med. Chir. Jour.," July, 1891; Rusin, quoted in Suppl., "Brit. Med. Jour.," May 23, 1891; Coomes, "Med. Age," July 25, 1891; Leslie Phillips, "Brit. Med. Jour.," Sept. 12, 1891; Brugger, "Archiv. f. Path. v. Phys. v. klin. Med.," Heft 3, 1890; Amicis, "Gaz. degli Osped.," Sept., 1890; Unna, "Monats. f. Prakt. Derm.," No. 8, 1891, and "Brit. Jour. Derm."; Dubois-Havenith, quoted "Brit. Jour. Derm.," Nov., 1891; Leloir, "Jour. des Mal. Cut. et Syph.," Jan., 1891.

Synopsis.—(Vol. 1891, p. 330.) ℞ Hydrarg. Oleatis (2½% to 5%) ʒj; Ac. Salicylici. gr. 5 to 15; Ichthyolis ♏15; Ol. Lavandulæ, q.s. A preliminary application in treating lupus—the ointment to be diluted if skin is broken. For large sores **Zinc** and **Carbolic Acid Ointment.** Application of **Peruvian Balsam** twice daily after removing crusts with soap and water. **Ice** for relief of pain. **Aristol** (p. 11).

LYMPHADENOMA.

Synopsis.—(Vol. 1891, p. 331.) **Fowler's Solution**, gtt. 5 daily, injecting gtt. 10 daily into the hypertrophied glands, increasing the dose and following with **Phosphide of Zinc.**

LYMPHANGITIS.

Frank J. Wethered, M.D.

Dr. E. Schwartz reports two cases of very severe lymphangitis, with diffuse cellulitis of the lower limbs, which he treated successfully by Verneuil's method of keeping the parts under prolonged and frequently repeated applications of **Carbolic Spray.**

The following is the mode of procedure: the limb is placed on some impermeable material in such a manner that the spray can run easily off the part; the rest of the body and the bed are protected with mackintosh. One or two spray producers filled with a watery solution of carbolic acid from 1 in 40 to 1 in 80, are then placed at a distance of about a yard from the part to be acted on, and allowed to play on it for an hour or an hour and a half two or three times a day. Signs of carbolic poisoning must be carefully looked for, and in any case the strength of the solution and the length and frequency of the applications must be diminished as the inflammation subsides. This treatment should be combined with free incision and with wet antiseptic dressings. The patient's strength must, of course, be supported by proper constitutional treatment.

REFERENCES.—"Brit. Med. Jour.," April 4, 1891; "Rev. Gèn. de clin. et de Thér.," March 4, 1891.

LYMPHATIC GLANDS (Inflamed).

Synopsis.—(Vol. 1890, p. 356.) Very Hot Compresses wrung out of boiling water and kept on for fifteen minutes, repeating this night and morning for about a fortnight.

(Vol. 1891, p. 46.) Picric Acid, 1½ parts to Distilled Water, 250 parts locally, relieved lymphangitis in a gouty subject.

MALARIA.

Synopsis.—(Vol. 1891.)—Newbouldia Lævis fluid extract, ♏15 to 60, for acute malarial splenitis (p. 42). Panbotana Bark decoction as a substitute for quinine in malarial fever (p. 44). Pereirine, used as an adjunct to Quinine, or when it fails (p. 44).

MANIA. *Græme M. Hammond, M.D., New York.*

Malfilatre and Lemoine[1] report the result of a trial of **Hyoscine** on sixty-two cases of mania. Small doses ($\frac{3}{10}$ to $\frac{5}{10}$ cmm.), or moderate doses (1 cmm.) when administered hypodermically, were, in the majority of instances, followed by immediate and continuous sleep for several hours. In only a few cases were larger doses required. There did not appear to be any uncomfortable after-symptoms, such as sometimes contra-indicate the employment of other hypnotics.

In some very sensitive individuals it produced a temporary intoxication, and in other cases the dose had to be steadily increased in order to obtain the hypnotic action for any number of successive nights.

REFERENCE.—[1]"Practitioner," May 1, 1891.

MEASLES. *Frank J. Wethered, M.D.*

The cold bath treatment of various acute diseases has within the last few months received a great impetus, and the results obtained have fully justified the recommendation. This treatment has been used with success in severe cases of measles.

M. Dieulafoy gives an account of a case of measles in a girl, æt. sixteen, in which at first no abnormal signs were presented, but after the sixth day there was suppression of the urine, and the pulse grew very weak and irregular. The next day there was collapse, with the appearance of imminent death. After consultation the girl was put into a **Cold Bath** (76° F.), and cold water poured on her head. At first there was shivering and chattering of teeth, and the face took a livid tint; but the pulse quickly fell from 150 to 110, and became stronger and more regular. After the patient had been a quarter of an hour in the bath, she was taken out, dried, and wrapped in a blanket. The shivering went on for another five minutes, and then quiet sleep supervened. Similar baths were given every three hours during three days. After the first there was some improvement; free secretion of urine was established; the appetite returned on the second day of the bath, and finally there was good convalescence.

In another case of a very severe attack of measles in a child of ten years, after some uncertain initial symptoms there was an abundant rash with a temperature of 104° F., great restlessness, alternating with coma; the respiration rose to 80 per minute, and the pulse to 145. A bath of 75° F. was given for twelve minutes, which afforded a little relief; and under treatment with similar baths at intervals of four or five hours there was slow improvement in respiration and temperature, whilst the urine, which had been almost entirely suppressed, became nearly normal. These baths were given whilst the eruption was fully out; it was made slightly pale for the time, but not otherwise affected. There was also some broncho-pneumonia when they were begun, but that caused no further inconvenience.

REFERENCE.—"Practitioner," Nov., 1890.

Synopsis.—(Vol. 1891, p. 332.) **Caffeine**, 2 to 3 grammes daily, hypodermically, to guard against cardiac syncope. In malignant cases, **Cold Baths.**

MELANCHOLIA.

Synopsis.—(Vol. 1891, p. 17.) **Cannabis Indica Tincture**, ♏ 10, sometimes useful in converting depression into exaltation.

MELANODERMA, MELASMA, CHLOASMA. *T. Colcott Fox, M.B.*

For the melasma of pregnant women, rub in twice daily the following:—

℞ Cocoa Butter		Yellow Oxide of Mercury	gr. ij
Castor Oil	aa ℥ij ℈	Essence of Roses	q.s. to perfume
Oxide of Zinc	gr. v		

REFERENCE.—"Jour. de Méd. de Paris," Jan. 4, 1891.

MENINGITIS. *Græme M. Hammond, M.D., New York.*

Dr. James Barr[1] believes that in simple meningitis the **Antipyretic Treatment** should be promptly and efficiently prosecuted, and that of all the means at our disposal the **Ice-cap** is the most efficacious. It not only lowers the temperature, but it also modifies the circulation within the cranium. Its application should be continuous until the temperature has remained subnormal for some time. He does not consider the tepid or cold bath effective, and believes the new antipyretic drugs are not reliable in their action. The bowels should be kept freely open, and for this purpose nothing acts so well as calomel. To relieve the restlessness and cerebral excitement, the author places the greatest confidence in **Opium,** and advocates that it be administered freely. When there is fever, he prescribes, for an adult, 10 grains each of **Dover's Powder** and **Salicylic Acid,** to be repeated every three or four hours. He has discarded bromide and iodide of potassium and chloral. Alcohol in any form should be strictly avoided.

REFERENCE.—[1] "New York Med. Jour.," April 11, 1891.

MENINGITIS (Tubercular). *Græme M. Hammond, M.D., New York.*

In many cases of tubercular meningitis, says Mr. W. Essey Mynter, coma supervenes with great rapidity and with all the signs of cerebral pressure, whilst after death little can be found besides an excess of cerebro-spinal fluid. The possibility of recovery in this class of cases, by draining away the fluid continuously by the theca vertebralis, suggested itself, and Mr. Mynter has made the experiment on four cases. All of them were almost *in extremis mortis* when the operation was performed. A tiny incision was made in the skin beside the spine of the second lumbar vertebra, and a Southey tube and trocar inserted till the point impinged against the lamina. The point was then directed slightly downwards, and was pushed through the ligamentum subflavum and theca with an inclination towards the middle line. On withdrawing the trocar the cerebro-spinal fluid began to flow. A tube was inserted for continuous drainage. Following the operations the symptoms of cerebral pressure were immediately relieved, but the relief was only temporary, and all four cases eventually died. The post-mortem examination showed tubercular deposits in the brains in all four cases. Mr. Mynter considers that where there is little development of tubercle the effects of the operation may be more permanent.

REFERENCE.—[1] "Lancet," May 14, 1891.

MENORRHAGIA AND METRORRHAGIA.

Synopsis.—(Vol. 1890, p. 359.) Bromide of Potassium, 5j, twice or thrice daily for youthful patients suffering from ovarian hyperæmia; Digitalis

where heart is the cause; **Rest** when it is due to overwork; **Strychnine** when due to loss of muscular tone and general debility the flow being too free and lasting too long. ℞ Liq. Strych. ♏iij, Tinct. Digitalis ♏x, Ext. Hydrast. Can. Liq. ♏xv, Aq. ad. ℥j, M., t.d.s. **Ergot**, Liq. Ext. ℥ss, t.d.s.; **Hydrast.**, Liq. Ext. ♏xx, t.d.s.; and **Hamamelis** Tinct., ♏v to x, t.d.s, where chronic metritis and pelvic hyperæmia cause the hæmorrhage; **Cannabis Indica** is uncertain. ℞ Ext. Ergotæ Liq. ℥ss, Potassæ Chloratis gr. x, Acid. Hydrochlor. Dil. ♏x, Infusi Gentianæ ℥j, t.d.s., for three or four months without intermission in cases of subinvolution. Removal of retained membranes or hypertrophied state of endometrium by **Curette** if necessary; **Emmett's Operation**, or the **Cautery**, for laceration of cervix; **Hot Vaginal Douche** is a valuable accessory; **Ext. Belladonnæ, Carbolic Acid, Iodine**, the **Thermo-cautery**, or the **Positive Pole** of the continuous current may be used as intra-uterine applications. Mucous polypi require the wire snare, and fibroid the écraseur for their removal; removal of the appendages or **Electricity** for myomata; **Tannin-wool Pad** for hæmorrhage due to cancer of cervix or erosion; **Abdominal Section** for tubal disease; for hæmorrhage due to pelvic inflammation **Rest** and administration of the **Bromides** alone or combined with **Hydrastis** and **Salix Nigra.**

MESENTERY (Diseases of). *A. W. Mayo Robson, F.R.C.S.*

Although Professor Llobet[4] was fortunate enough to be able to remove successfully a freely moveable lump, about the size of a kidney, which turned out to be a sarcoma of the mesentery, he had to resect almost five feet of the small intestine, and the operation occupied two and a half hours. How much more difficult must it be to try to get away a tumour firmly fixed to the structures in front of the spine? My own experience of these cases has convinced me that, as a rule, they are best left alone, as the hæmorrhage is extremely free, the infiltration of the surrounding parts renders complete removal almost impossible, and the interference with the blood supply of the bowel renders intestinal resection almost essential.

Serous Cysts of the Mesentery.—M. Terrillon[3] reports three operations for the removal of cysts of this kind in women, of the ages of eighteen, twenty-two, and twenty-three respectively. He finds that serous cysts of the mesentery present several clinical features sufficiently characteristic to allow of precise diagnosis in certain cases. They are generally situated in the median or lateral part of the abdomen. They exhibit no evident connection with organs which usually give rise to abdominal cysts—the ovary, liver, and kidney. There are exceptions to this rule, as a mesenteric cyst may grow till it becomes closely applied to one of those organs. A loop of intestine may lie on the surface or side of the cyst, causing resonance on percussion. The cyst is often fairly moveable, especially from side to side. Fluctuation is fairly marked, even when the cyst is tense; but as the tumour is often easily displaced, it should be fixed by the hands pressed against the abdomen before percussion of its surface. When a mesenteric

cyst is clearly perceptible on inspection, it may hold from five to ten pints of fluid. The cyst is not lined with epithelium. The fluid which it holds is serous, slightly coloured, and often assumes an appearance which has been compared to a decoction of chalk. The cyst wall is, as a rule, intimately adherent to the laminæ of the mesentery, between which it has developed, and to the intestine. Hence the surgeon must never attempt complete enucleation when this adhesion is marked, else he may tear open the intestine, make holes in the mesentery, or endanger the vitality of neighbouring structures by dividing large vessels. There is reason to suppose that these cysts have occasionally a traumatic origin. Puncture through the abdominal walls is unsatisfactory, and may involve injury to the intestine. The right treatment is abdominal section, tapping, and cautious removal of as much of the cyst wall as can safely be peeled off from its connections. The edges of the orifice thus made in the cyst are stitched to the abdominal wound ; then the cyst is drained, and it will slowly close. Blood cysts and chyle cysts may often be enucleated with ease and safety. Great care must be taken in the after-treatment of drained mesenteric cysts. Free packing with iodoform gauze is good, but when the cavity is large so much iodoform may be absorbed as to cause poisoning. In one of M. Terrillon's cases, syncope, thread-like pulse, and delirium set in, and did not abate until salol gauze was substituted for iodoform. Salol is less poisonous but less antiseptic, and therefore salol dressings require more frequent changing than does iodoform gauze. The cavity at first diminishes rapidly, but a fistulous track is left, which takes about three months to close. All M. Terrillon's three cases recovered.

Dr. Robinson[1] reports a case of operation for multiple multilocular cyst of the mesentery. Enucleation was performed, but the child unfortunately collapsed. Tapping seems to be useless, but drainage is both safe and effectual, and the fistula usually closes within a few weeks.

One of the purposes served by the omentum is that of protecting the general peritoneal cavity against infection from within. In performing this function the omentum contracts adhesions, and if these are sufficiently extensive a tumour is formed, quite perceptible to palpation through the abdominal walls. These so-called "omental tumours" have formed the subject of a paper by Dr. Hadra[2], who advocates laparotomy and removal, if suffering be caused by the tumour, and if it does not yield to massage, warm baths, and resorbent treatment.

REFERENCES.—[1]Wm. Robinson, "Brit. Med. Jour.," Jan. 31, 1891 :

[2]B. E. Hadra, "Ann. of Surg.," July, 1891 ; [3]Terrillon, Suppl., "Brit. Med. Jour.," Oct. 3, 1891 ; [4]Llobet, Suppl., "Brit. Med. Jour.," Sept. 12, 1891.

MICROCEPHALUS. *Henry Dwight Chapin, M.D., New York.*

Dr. Lannelongue,[1] states that an examination of the microcephalic cranium shows an advanced state of the sutures and narrowness of the fontanels. There is early ossification of the sutures, and since the cranium is then rigid, cerebral evolution will necessarily be arrested. In certain cases of this condition there may be ventricular dropsy, cerebral sclerosis, premature synostosis and hyperostosis of the cranium.

Meningeal hæmorrhage in young children, especially when resulting in hæmatoma of the convexity of the brain, circumscribed pachymeningitis and serous cysts following the formation of a blood-clot, may be relieved by **Craniectomy**. This result may also be obtained in certain cases of hyperostosis due to hereditary syphilis, and certain forms of hydrocephalus.

The pathological anatomy in these conditions is not yet well defined. It would also seem that contra-indication to surgical interference was furnished by cases of cerebral atrophy of vascular origin, by diffuse sclerosis, and by encephalitis. Nevertheless it may possibly be shown that such a view is erroneous, and that interference even in such cases may be tolerated. The author employs both the linear and flap methods in craniectomy, preferring the latter. Linear craniectomy is made along the length of the superior longitudinal sinus, and may be prolonged across the coronal suture, upon the motor or Rolandic zone, towards the centre of Broca. By flap craniectomy the author refers to an operation in which there are flaps made which are adherent by a bony base. The flap may include only a single bone, as the parietal or frontal, or it may include two. The flaps may have the form of a U, of an inverted V, of a rectangle, of a horseshoe, or of a T. The loss of substance in such an operation is from eight to twelve millimètres in length, and the average duration of an operation is forty to forty-five minutes. The wound having been made, the crown of the trephine is introduced at one of its extremities. If there has been pachymeningitis the dura mater may be incised and subsequently sutured. It is not necessary to resect the periosteum. In the author's twenty-five operations there was but one death, in three cases there was a moderate degree of suppuration, and in no case any necrosis. The youngest child was eight months old, the oldest twelve and a half years. In most cases there was great improvement in the intellectual condition as a result of the operation.

REFERENCE.—[1]" Rev. Mens. des Mal. de l'Enf.," May, 1891.

MIGRAINE. *Græme M. Hammond, M.D., New York.*

Dr. Frederick Pearse[1] considers migraine can often be traceable to sources of nerve exhaustion, and is often benefited by constant rest. He has found little or no benefit, certainly in severe cases, from quinine, strychnine, arsenic, ergot, iron, cod-liver oil, nitro-glycerin, amyl, etc. To diminish the frequency of the attacks, and, if possible, to prevent them altogether, he administers 15 or 20 minims of **Succus Belladonnæ** with 10 grains of **Chloral** every night at bed time, or, if the attacks are infrequent but recur with some degree of regularity, he orders the remedy to be taken for a few nights before the expected paroxysm.

Dr. Landerbilco[2] speaks highly of an infusion of **Green Coffee** for migraine. He recommends a mixture of one-half Martinique coffee and one-quarter each of Mocha and Isle Bourbon berries. Six drachms of this mixture are placed in a glass of water and macerated for twelve hours; the contents are then strained, and the clear fluid is drunk, without the addition of sugar, preferably before breakfast, but always on an empty stomach.

REFERENCES.—[1] "Pract.," Jan., 1891; [2] "New York Med. Journ.," Dec. 6, 1890.

Synopsis.—(Vol. 1891, p. 334.) In cases due to eye strain the mydriatics, *e.g.*, **Belladonna, Atropine, Cannabis Indica, Hyoscyamine,** together with appropriate glasses, and perhaps tenotomy.

Ethoxycaffeine, gr. 4 (p. 27). **Methylene Blue,** gr. 1½ to 4 internally, and gr. 1 hypodermically (p. 40).

MORPHIA HABIT. *Frank J. Wethered, M.D.*

Dr. J. B. Mattison, of the Home for Habitués, Brooklyn, contributes a paper on this subject to the "Therapeutic Gazette," Sept. 15, 1890.

Tersely stated, it may be said that this disease involves the cerebro-spinal and sympathetic systems, well-attested clinical facts proving that they bear the brunt of opium excess, which induces changes that give rise to great nervous derangement when the opiate is abruptly withdrawn, and which, in gradual withdrawal, is seldom entirely avoided.

The method which this observer employs is based on the power of certain remedial resources to subdue abnormal reflex action, and secures two cardinal objects—minimum duration of treatment and maximum freedom from pain.

It consists in producing a certain degree of nervous sedation, and consequent control of reflex irritation by means of the bromides, **Bromide of Sodium** being especially employed.

The drug should be given continuously, that is to say, twice in the twenty-four hours at regular intervals, so as to keep the blood constantly charged with the drug.

Dr. Mattison, to quote his own words, says, "Our initial dose of the sodium is 30 grains, twice daily, at twelve hours' intervals, increasing the amount 20 grains each day—*i.e.*, 40, 50, 60 grains—and continuing it, in proper cases, eight to ten days, reaching a maximum dose of 100 to 120 grains twice in twenty-four hours.

"At the same time the quantity of opium which the patient has been accustomed to take is gradually decreased. And with all patients this rule governs : *each case is a law unto itself, and the length and amount of the bromide-giving and consequent rate of opiate decrease is determined entirely by individual peculiarity, as shown both before and during treatment.*"

Dr. Mattison strongly advises that after all morphia has been cut off, the patient should be kept in bed for three or four days. The after treatment consists in tonics, and the management of insomnia. For relief of this **Cannabis Indica,** or **Chloral** and **Bromide** in full doses, suffice.

REFERENCE.—"Therapeutic Gazette," Sept. 15, 1890.

MUCOCELE IN INFANTS.

Synopsis.—(Vol. 1890, p. 362.) Passage of conical probes the size of 3 or 4 Bowman through the dilated punctum without slitting the canaliculus; **Astringent Lotions** and **Scrupulous Cleanliness** of conjunctiva and nasal mucous membrane may be first tried.

MUCOUS MEMBRANE (Transplantation of).

F. S. Eve, F.R.C.S.

E. Djatschenko[1] has endeavoured to elucidate this subject by experiments on dogs, taking mucous membrane from the mouth and inserting it in place of pieces excised from the eyelid.

The vascular regeneration was in part studied by injecting coloured material through the carotid after the pieces had healed in their new places. The more blood left in the transplanted piece, the more are its vessels thrombosed and the less readily is circulation re-established therein. Complete reunion is established towards the ninth day, no real cicatricial tissue forming. He draws the following practical conclusions :—

(1,) The transplanted piece must lie firmly and intimately against its new base ; to this end hæmorrhage must be carefully stopped, the clotted blood carefully removed, and the transplanted piece sufficiently pressed against the wounded surface.

(2,) Before transplantation the piece must be washed in warm (99° Fah.) 6 per cent. salt solution (longer immersion, up to one and a half hours, in this solution will not act injuriously).

(3) The superabundant fat-tissue from the under side of the transplanted piece must be removed with scissors; still, all the submucous cellular tissue should not be cut away, as otherwise the conditions for the re-establishment of the blood-circulation in the transplanted piece are less favourable.

(4,) The piece intended for transplantation, as well as the wound-surface, must not be exposed to the action of strong disinfectants; but the transplantation should be conducted as aseptically as possible.

(5,) The transplanted piece ought, if possible, to cover the whole wound-surface completely, as the uncovered portion forms a scar.

(6,) The transplanted piece must be protected from desiccation.

REFERENCE.—[1] "Ann. of Surg.," Feb., 1891.

MULTIPLE NEURITIS.

Synopsis.—(Vol. 1890, p. 362.) **Hypodermic Injections of Strychnia** twice daily have relieved alcoholic neuritis, also in paralyses, specially diphtheritic, beginning with $\frac{1}{40}$ gr. increased to $\frac{1}{6}$ gr.

MUSCLE (Transplantation of). *F. S. Eve, F.R.C.S.*

The practicability of this procedure has been successfully demonstrated by Gluck[1]. He finds, as a result of experiments, that if the wound remains perfectly aseptic the transplanted portion undoubtedly remains perfect in every respect and assumes physiological activity in its new situation. In an animal which he killed two months after a piece of muscle had been transplanted into one of its muscles, no difference could be detected in the reactions or in the minute structure between the indigenous and the transplanted portions. He states, however, that if an examination of the parts be made at varying intervals within two months after implantation, it will be found that the transplanted tissue undergoes degeneration, and is then invaded by new tissue from the indigenous muscle, so that, in fact, the transplanted portion merely forms a nidus for the growth of muscular fibres from the neighbouring parts. In some instances, where but little of the original muscle remained, this regenerative power seemed incapable of being called into action, so that clearly there is a limit to any useful muscle implantation. In such cases a fibrous cord instead of a muscle was the invariable result after a time.

REFERENCE.—[1] "Brit. Med. Jour.," Feb. 7, 1891.

MYCOSIS.

Synopsis.—(Vol. 1891, p. 11.) **Aristol** is a valuable and comparatively unirritating application.

MYOMA.

Synopsis.—(Vol. 1891, p. 32.) **Hydrastis Canadensis** liquid extract, ℥ 5 to 10, for uterine myoma.

MYOPIA. (See "Eye.")

MYXŒDEMA. *P. Watson Williams, M.D., Lond.*

In our last edition we referred to some interesting experiments in reference to the transplantation of portions of the thyroid gland in myxœdema.

Another case of myxœdema has been reported, in which the operation of grafting the thyroid has been performed with success on a woman aged forty-one. M. Merklen[1] showed the patient at a meeting of the Société Médicale des Hôpitaux, in Paris. The graft, consisting of one of the lobes, was taken from a living sheep at the time of the operation, and was inserted beneath the skin in the right submammary region.

On the other hand, Dr. G. Zuccaro[2] has made some very careful inquiries upon the results of extirpation of the thyroid gland. These were especially conducted on dogs condemned to be slaughtered at the abattoirs. Dr. Zuccaro claims to have discovered that there exists in dogs, in addition to the thyroid gland, a lobule of different substance situated in front of the thyroid, and also two other accessory lobules, of the same structure, but smaller, at the posterior aspect of the gland.

Dr. Zuccaro gives it as the result of his vivisections that, though dogs may survive the extirpation of the thyroid, they do not survive that of the three lobules, even should a portion of the thyroid be left.

In conclusion, Dr. Zuccaro observes that the implantation of the thyroid, whether in the abdominal cavity, or in the subcutaneous tissues, is absolutely incapable of paralyzing the effects of thyroidectomy, to which the animals succumbed, in the same way as if no preventive implantation had been effected. The reason of this is that the thyroid gland, after being fixed in its new destination, quickly becomes degenerate, and is absorbed.

REFERENCES.—[1] "Brit. Med. Journ.," vol. ii., p. 1258, 1890; [2] "Il. Prog. Med.," anno. iv., No. 17; "Lond. Med. Rec.," May 20, 1891.

Synopsis.—(Vol. 1891, p. 335.) **Transplantation** of thyroid gland of sheep.

NÆVUS.

Synopsis.—(Vol. 1890, p. 364.) **Clamping** the nævus first and then injecting 5 to 7 minims of **Rectified Spirit of Wine**; this may be frequently repeated.

NARCOTIC POISONING (Chronic).

Synopsis.—(Vol. 1890, p. 364.) **Ext. Cannabis Indica**, ½ gr. with a few grains of **Compound Colocynth Pill**, thrice daily, cured two cases, one of chronic chloral, and the other of chronic opium poisoning.

NASO-PHARYNX.

Synopsis.—(Vol. 1890, p. 365.) Small vegetations may be removed by finger nail, and the larger by Schutz's antero-posterior forceps, followed by curetting with Lennox Browne's moveable curette or various other curettes, and the naso-pharynx may be bathed with a spray of **Common Salt**, ¾% solution for several days afterwards.

NEURALGIA (Facial). *Græme M. Hammond, M.D., New York.*

Bœquilon[1] recommends **Butyl Chloral**, administered either in solution, in pill form, or in enemata, for the relief of facial neuralgia. Subcutaneous injections of it lead to the production of abscesses. A teaspoonful of a solution containing 15 grains of butyl chloral may be administered once or twice daily.

Dr. H. A. Hare[2] prefers to combine the butyl chloral with 10 or 15 drops of the tincture of **Gelsemium**. In true migraine, with hemian, opsia, he considers it one of the most useful remedies, given together with antipyrin and caffeine, cannabis indica and gelsemium.

Rose[3] reports a most interesting case of facial neuralgia cured by removing the Gasseriar ganglion. The case was a most obstinate one. The pain chiefly affected the inferior division of the fifth nerve at first, but finally the pain invaded the right side of the tongue and the right side of the upper jaw. She had been subjected to the following operations: Stretching the inferior dental nerve—the nerve was also divided at its exit from the mental foramen; the lower jaw was trephined over the dental canal, and half an inch of the nerve was excised; portions of both lingual and dental nerves were excised. These operations were performed singly during a period of seven months, and were only attended by temporary relief. The agony of the patient finally became so great that Mr. Rose decided to remove the Gasserian ganglion. The ordinary operation for removal of the superior maxilla was first performed, and when the bleeding had been arrested and the foramen ovale exposed to view, the pin of a half-inch trephine was passed into the foramen, which acted as a centre, and the ring of bone surrounding it was carefully sawn and lifted out. The ganglion could then be seen. It was loosened by gently passing an aneurysm needle under it, and removed in three or four pieces, by the aid of a narrow probe-pointed bistuary and fine-hooked forceps, the dura being uninjured. The old pain ceased from the time of the operation, and has not since returned.

REFERENCES.—[1] "Therap. Gaz.," March 16, 1891; [2] "Pract.," 1891; [3] "Lancet," Nov. 1, 1890.

Synopsis.—(Vol. 1891, p. 343.) **Gelsemium Liquid Extract**, dose varying from ♏2 to 13 in spasmodic torticollis, facial tic and neuralgia of fifth nerve. For toothache, the smoke of the burnt seeds of **Hyoscyamus Niger** conveyed

through a paper tube to the hole in the tooth. Powdered **Chloride of Sodium** as snuff taken into the nostril on the affected side; bathing with very **Hot Water** in causalgia; also **Morphine** injections, **Blisters**, and the **Galvanic Current**.

Tincture **Cannabis Indica**, ♏ 10 (p. 17); **Chloralamide**, gr. 4 to 8 (p. 22); **Exalgine**, gr. 4 (p. 30); **Methylene Blue**, gr. 1½ to 4 internally, and gr. 1 hypodermically (p. 40); **Phenyl Urethan**, gr. 2 to 7 (p. 45); **Theine**, gr. ¼ to ½ hypodermically in sciatica, occipital and supra-orbital neuralgia (p. 51).

NEURASTHENIA. *Græme M. Hammond, M.D., New York.*

In an excellent article on the treatment of neurasthenia M. Blocq[1] expresses the view that hypnotic suggestion is not a practicable therapeutic measure except, perhaps, in very exceptional cases.

In mild forms of neurasthenia, **Hydrotherapy, Iron,** and **Bromide of Potassium** are generally sufficient. In the severe forms of the disease the treatment advocated by Weir-Mitchell will be found necessary. In those cases associated with a condition of torpidity of the bowel he recommends the following method, successfully employed by M. Glenhard: (1,) The wearing of an abdominal belt, day and night; (2,) The bowels kept regular by the administration of laxatives daily; (3,) Four meals daily, consisting of bread and soup, or coffee, in the morning; at eleven a meal of roast beef or roast mutton and eggs and bread; at four a luncheon of bread and preserves or a cup of beef tea; at half-past six a meal similar to the one given at eleven o'clock, with a drink of either alkaline water or beer; (4,) Alkalinization, by means of bicarbonate of soda or Vichy; (5,) Cold douches for twenty or thirty seconds.

Local pains can be controlled by means of faradism applied to the sensitive areas. The fluid extract of **Kola** (15 to 40 drops) and **Statical Electricity** are also spoken of favourably.

REFERENCE.—[1] "Nouveaux Remèdes," July 24, 1891.

NEURITIS.

Synopsis.—(Vol. 1891, p. 344.) A case due to arsenical poisoning treated first by **Narcotics**, and later **Galvanic Current, Massage**, together with **Iodide of Potassium** and **Strychnine**.

Tincture **Cannabis Indica**, ♏ 10, useful in conjunction with other drugs (p. 17).

NOSE. (See "Rhinitis," and "Rhinoscopy.")

NUTRITIVE ENEMATA. *Frank J. Wethered, M.D.*

Nutritive enemata, though often indicated in cases of œsophageal or gastric disease, are comparatively rarely used, because of the general scepticism as to their utility. Either they are of but little nutritive value, as in the case of bouillon, or are difficult of absorption by the rectum, as in the case of milk.

Dr. Huber[1], of Zurich, has recently made some experiments, by which he has found that the absorption of raw eggs is easily accomplished, being greatly aided by the addition of common salt. The salt is well borne, and causes, as a rule, no irritation of the bowel. He considers that eggs beaten up with salt, in the proportion of 15 grains to each egg, are the best for nutritive enema. His method of procedure is as follows: Two or three eggs are taken, and 30 to 45 grains of salt are added. They are slowly injected by means of a soft-rubber tube carried as high up the bowel as possible. Three such enemata are given daily. An hour before each enema, the rectum is cleared out by means of a large injection of warm water.

REFERENCE.—[1] "Medical Age," Jan. 25, 1891.

ŒSOPHAGEAL STRICTURE.

Synopsis.—(Vol. 1891, p. 346.) Use of Laminaria Tents.

OMENTAL TUMOUR. (See "Mesentery.")

OPHTHALMIA. (See "Eye.")

OPHTHALMIA (Infantile). *Henry Dwight Chapin, M.D., New York.*

Dr. Dehanne[1] thinks more attention should be paid to the prophylaxis of blindness from ophthalmia in the new-born. The author recommends Crédé's method of dropping one drop of a 2 per cent. solution of nitrate of silver into each eye of the infant immediately after birth, and in connection with this, the eyes should be washed with a 1 to 2,000 solution of sublimate. Vaginal injections and good hygiene for the mother prior to parturition must also be insisted on. If the lids are swollen they should be covered with pledgets of absorbent cotton moistened with iced water, or the lids may be cleansed every hour by means of pledgets of absorbent cotton moistened with Van Swieten's solution. One may instil into each eye, morning and evening, 4 or 5 drops of the following solution:—

℞ Sulph. Neutral Eserini 10 grammes | Aq. Destil. 20 grammes

Or the conjunctival surface of the lid may be touched daily with a 1 to 50 solution of **Nitrate of Silver.**

Dr. Schmidt-Rimpler[2] does not believe that occular blennorrhœa in the new-born is always due to the gonococcus. As a prophylactic measure he recommends instillation of the **Officinal Solution of Chlorine** which should be kept in a dark place, tightly stoppered.

Dr. Grossmann[3] in discussing the prevention of infantile ophthalmia, commends the following recent legislation in the State of New York:—

"Section I.—Should any midwife or nurse having charge of an infant in this State notice that one or both eyes of such infant are inflamed or reddened at any time within two weeks after its birth, it

shall be the duty of such midwife or nurse so having charge of such infant to report the fact in writing within six hours to the health officer or some legally qualified practitioner of medicine of the city, town, or district in which the parents of the infant reside.

Section II.—Any failure to comply with the provisions of this Act shall be punished by a fine not to exceed one hundred dollars, or imprisonment not to exceed six months, or both.

Section III.—This Act shall take effect on the 1st of September, 1890.

REFERENCES.—[1] "Journ. de Méd.," March 15, 1891 ; [2] "Journ. de Méd.," April 12, 1891 ; [3] "Brit. Med Journ.," Febuary 7, 1891.

OPHTHALMIA (Phlyctenular).

Synopsis.—(Vol. 1890, p. 378.) In purulent ophthalmia, Ice applied to lids reduces the swelling very quickly, and use **Sulphate of Eserine** or the application of **Nitrate of Silver** 2% solution brushed over the lids as early as possible; **Lot. Hydrarg. Perchlor.** introduced on a soft camel's hair brush into the upper cul-de-sac and daily repeated ; Crede's method of wiping lids dry directly after child's birth, washing the lids with clean water and soap, drying them and instilling one drop of a 2% solution of **Nitrate of Silver** to prevent ophthalmia neonatorum ; **Mercurial Frictions** or sub-conjunctival injections of **Perchloride of Mercury**, 1 in 2000 increased to 1 in 1500, for sympathetic ophthalmia.

(Vol. 1891, p. 346.) For photophobia, **Eserine**, gr. $\frac{1}{2}$ or $\frac{1}{4}$ to ℥j, one drop applied every four hours. Yellow **Oxide of Mercury Ointment**, gr. j to ℥j; **Vaseline** used night and morning. **Atropine** is substituted for Eserine at the end of the treatment.

OPTIC NERVE (White Atrophy of).

Synopsis.—(Vol. 1891, p. 347.) **Suspension** has been tried with reported success.

ORCHITIS.

Synopsis.—(Vol. 1891, p. 8.) **Anemonin**, gr. $\frac{1}{6}$ in Red Wine for blennorrhagic orchitis.

ORTHOPÆDICS.

Robt. Jones, F.R.C.S., E.
John Ridlon, M.A., M.D., New York.

John Ridlon, of New York, has published a report upon cases of hip disease examined by himself when in England, occurring in the practice of the late Hugh Owen Thomas. He offers the following suggestions, based upon the following observations :—

Very many of these cases that have had the short splint applied before muscular spasm and pain had subsided and before deformity had been reduced, that have been allowed to walk without high patten and crutches—that is to say, those whose joints have only been partially immobilized without being protected from the pressure of superincumbent weight and the concussion of walking—present a

moderate degree of adduction, absence of motion, and, in a few cases, slight flexion, and in one instance, in-knee.

On the other hand, those cases that have worn the long splint until cured, that have remained in the horizontal position till all pain and muscular spasm had subsided, and had then used the high patten and crutches, and had had the benefit of intelligent care and nursing, have been cured without flexion or other deformity than the shortening due to actual bone-erosion and arrested growth, and they have exhibited motion in a very large proportion of cases, and in not a few there has been normal motion.

The absence of any traction force, either in the line of the shaft or of the neck of the femur, does not seem to have increased the number of patients having abscesses, nor the number of abscesses in each case, nor to have increased the frequency of shortening, nor the amount of shortening in each case. No case has given any signs of perforation of the acetabulum, either by suppurating track or by the head of the femur, and involuntary muscular spasm and pain arising therefrom are noticeable by their absence. In a word, those patients who have had no traction are found to be remarkably free from all those conditions which we have been taught can only be relieved by persistent and long-continued traction.

In conclusion, nothing appears to indicate that the principles upon which Mr. Thomas had based his teaching are in any way at fault, though in practice there is still somewhat to be desired.

I.—Sacro-Iliac Disease.

Benjamin Lee, of Philadelphia, has published two cases of sacro-iliac disease, and formulates the following propositions in reference to diagnosis and treatment:—

(1,) Disease of the sacro-iliac symphysis induces a characteristic deformity of the spine, of which the features are a lateral displacement of the entire trunk in a direction away from the affected side, a single curve comprising the entire length of the spine, and the almost invariable absence of rotation; (2,) It also induces a peculiar rolling or waddling gait; (3,) It is often the cause of inveterate and excruciating sciatica; (4,) It is useless to attempt to remedy the spinal distortion so long as its cause remains unrelieved; (5,) The existence of chronic pain in the sciatic nerve, not yielding in a reasonable space of time to medication, should always lead the practitioner to make a careful examination of the spine and of the region of the ilio-sacral juncture; (6,) This affection is met with more frequently in adult than in child life; (7,) Its appropriate treatment consists of splinting the

pelvis, and thus preventing motion between the opposing surfaces of the symphysis, motion not being its natural function ; (8,) For the same reason extension cannot be expected to produce the favourable results in this affection that we obtain from it in diarthrodial joints ; (9,) The disease is often of extremely slow development ; (10,) Its first symptom is often abdominal pain, whence it may readily be mistaken for peritonitis, ovaritis, cystitis, and the like ; (11,) This pain is principally referred to the side on which the lesion exists, but may gradually extend to the opposite side ; (12,) The existence of severe unilateral abdominal pain, accompanied by little or no febrile action, should lead to the suspicion of the existence of this affection ; (13,) A mechanic may, by a happy chance, give temporary relief to a patient suffering from this disease, but as he is entirely ignorant of its seat and nature, he is not, perhaps, the safest person to whom to refer the patient.

Dr. Lee said that the sequence of events is as follows :—

(1,) Injury of the synchondrosis ; (2,) Subacute inflammation ; (3,) Irritation of the nerves of the joint, transmitted to the nearest plexus ; (4,) Resulting pain in the sciatic. The sciatica should be considered the result, not the cause, of all the trouble.

In nine cases out of ten neuralgia is the effect and not the cause of any trouble. As stooping in sacro-iliac disease was always injurious, he devised a handy instrument with which the patient could pick up an object from the floor while remaining erect.

II.—Pott's Disease.

The American Orthopedic Association held its fifth annual session at Washington on September 22nd to 25th, 1891, and several very interesting papers, chiefly on Pott's disease, were read. Dr. Judson, the President, reported three cases in which Pott's disease and malignant disease of the vertebræ had been confounded by himself and other observers. In one the diagnosis had been made ante-mortem. The patients were four-and-a-half, thirty-five, and forty-two years respectively. The chief diagnostic points are : (1,) Deformity, present in Pott's disease ; absent in malignant disease ; (2,) Local pain, both absent in Pott's and present in malignant disease. Dr. Gibney reported a case in a man of forty years in which he and others had been baffled in diagnosis : there was sarcoma of the sixth cervical vertebra.

Dr. Ridlon maintained that in syphilitic Pott's disease the onset is more rapid, the pain and disability greater, the kyphosis sharper in outline, and that abscesses often appear before deformity. If recog-

nized lesions of hereditary or tertiary taint are present, treatment should be by large doses of **Mercury** and **Iodide of Potassium.**

Mr. Howard Marsh had observed instances of suppurative tuberculosis in the metacarpus, tarsus, testis, cervical glands, knee, and hip in eight patients between sixty-five and seventy-five years. But senile tuberculosis of the spine was most rare. He had seen two cases. The patients were sixty-four and sixty-five years respectively. The College of Surgeons of London possessed an osseous specimen of the action of senile tuberculosis of the upper cervical vertebræ. In his "Studies of Old Case Books," Sir James Paget had recorded a case of Pott's disease in a gentleman of fifty-five, attended with angular curvature. Dr. R. H. Sayre recalled the case of a patient, aged fifty-five years, who recovered from Pott's disease, with paraplegia and abscesses.

Robert W. Lovett has presented a thoughtful paper upon lateral deviation of spine in Pott's disease. He maintains that lateral curvature of the spine is an exceedingly common, if not a uniform, symptom of Pott's disease in the lumbar and dorsal region. This deviation is generally accompanied by a certain amount of rotation, which does not follow the same rule as in scoliosis.

The lateral deviation is, for the most part, a symptom of muscular irritation, reflex to joint inflammation, and belongs to the same class as the malpositions of other diseased joints. It yields readily to treatment and is most rapidly reduced by rest in bed and spinal extension, although the ordinary treatment of Pott's disease is generally sufficient to overcome the lateral deformity if efficiently carried out.

Dr. Brackett said that relief from paraplegia may be confidently expected from continuous extension and fixation, even in cases of eighteen months' standing. This should be continued for some time after recovery.

Dr. Townsend thought that, as a rule, abscesses in Pott's disease should not be opened. In some cases aspiration should be done, and in others the cavity should be opened and drained, to prevent sepsis and danger to life. His views were based on the history of three hundred and eighty patients, seventy-five of whom had abscesses. Dr. Joung suggested the division of lumbar abscesses into external and internal, according to their relation to the psoas fascia. Dr. Vance advocated aspiration, repeated as often as fluid is detected. Dr. Willard advocated leaving dormant and caseating foci alone; liquifying collections he would aspirate and inject with **Iodoform Emulsion;** if true pus were present he would incise, wash out with **Sublimate Solution,** and avoid undue manipulation, which might cause fissures,

which might let the tuberculous poison into the system. He would then suture the incision, and inject **Iodoform** and **Boiled Olive Oil.** Dr. Myers maintained: (1,) That it is impossible to completely remove bacilli from the abscess cavity; (2,) That bacilli-infected wounds at times healed primarily; (3,) Infection was more imminent after incision because the wound laid open channels of infection.

Dr. Hadra suggested that the spinous processes at the seat of the disease be exposed, and then firmly wired together to secure rest and prevent deformity. The operation, as he had performed it for fracture of the cervical spine, was extremely simple and effective. Dr. Sayre thought the wires would not bear enough force to remove the weight from the vertebral bodies, and that outside protection would be necessary to prevent lateral and rotatory disturbance.

Dr. Ketch had learned from seventy-five cured cases that in length of treatment and degree of deformity the upper region of the spine is most favourable and the middle least of all, but paraplegia more frequently accompanies disease in the upper than in the lower regions, and that cases of traumatic origin recover sooner than those of tubercular origin. Sudden deaths sometimes occurred in cervical caries from interference of the respiration. Dr. Bartow said that the earliest important sign in the dorsal and lumbar regions is lateral curvature dependent on nervous tenderness. Apparatus should be constructed to oppose the rotation accompanying the lateral curvature as well as the antero-posterior deformities. He used the plaster-of-Paris jacket applied to effect the above objects. Dr. Foster said that extension was the best method in the acute stage. Extension should be made by light weights, the cords leading over the head and foot of the bed and attached to waist belts, chest belts, and head straps. Dr. Weigel reported a case of cervical Pott's disease, with abscess and paraplegia, successfully treated by extension in bed. Dr. Ridlon had kept patients in bed from three to four years, and had never seen a case which was not benefited generally and locally. Dr. Ryan thought recumbency the ideal treatment, but it was in many cases impracticable. He had found split plaster jackets efficient after the acute stage. Dr. Lee said that many years ago, when the plan had fallen into entire disuse, he was the first to adopt suspension after the method of Dr. J. K. Mitchell. The apparatus was Lavacher's head support and jury mast, attached to a chair or go-cart, or to a doorway swing. Dr. Sayre maintained that in the cervical and upper dorsal regions a metal posterior splint, supported on the pelvis, should be used with a jury mast, and in the lower dorsal and lumbar regions a plaster-of-Paris jacket with a jury mast. Recumbency should be practised in

the acute stage. Children should be placed in the wire cuirass. Dr. Ketch had been disappointed with a plaster-of-Paris jacket and jury mast in the cervical and upper dorsal regions. He commended a Taylor apparatus and chin-piece. In the lumbar region almost any supporting apparatus will secure a good result. Dr. Taylor stated that the antero-posterior lever secures rest and protection, and combats deformity. Old and neglected cases are especially amenable to treatment, as ankylosis is later and rarer than is generally supposed. Abscesses and paraplegia do not forbid a favourable prognosis. Dr. Bradford said that the plaster-of-Paris jacket was the readiest method, but had its disadvantages. That a steel brace gave better support, but required more skill and care, and that recumbency was the surest way to prevent deformity, but, as a rule, was impracticable for the long periods covered by the disease.

III.—Rheumatic Spondylitis.

Dr. Ryan said that this rare affection should not be confounded with rheumatoid arthritis of the spine. It is usually accompanied by rheumatic manifestations elsewhere. In the early stage the symptoms resemble those of tubercular spondylitis. Later, the deformity is not angular, but resembles that of senile kyphosis. Treatment should be directed to the relief of pain by **Support, Cautery,** and **Medication.** In the chronic form, when pain has lessened, mobility should be encouraged by passive motion. Dr. Hoadley deplored the confusion which is found in the nomenclature of these conditions which produce such a variety of results. He thought both rheumatism and osteo-arthritis were microbic diseases. If ligamentous structures interfere with motion, passive motion was proper. Dr. Lee was reminded of a case which was at first thought to be spinal myalgia, but which proved to be gouty disease of the cartilages, an infrequent affection. Apparatus afforded relief, but, of course, not a cure. Dr. Ryan said that gouty spondylitis is generally attended by manifestations in other parts of the body. He had failed to state that his patient had limited respiratory movements. Dr. Vance related a case in which there was, in addition to the spinal affection, complete immobilization of the thorax, with chiefly diaphragmatic respiration. Dr. Bartow had seen a case in which relief was afforded by the spinal jacket. Dr. Gillette reported a case which, at the first glance, resembled the deformity of Pott's disease, but which proved to be rachitic in its etiology. Improvement followed a few days after suspension was begun.

IV.—Case of Ainhum.

An interesting case of this malady has been furnished by H. J. McC. Todd. He states that :—

'King Twala, aged thirty, Krooman, was placed on the sick list complaining of pain and swelling of both little toes, which presented the following appearances : The left toe was enlarged to twice its natural size, and was twisted on its axis, so that the nail looked outwards, and was so loosely connected to the foot that I feared he would lose the member if it struck against anything. He had no power of moving it in association with the other toes, and its sensation was very deficient. On a level with the web of the toe was a very tight constriction, which, on the inner and plantar surface had ulcerated, but on the other side was represented by a firm band of fibrous tissue ; the right little toe was surrounded by a similar tight band, which, however, had not broken down. This man states that his left toe was first affected four years ago, and his right about one year since.

"On inquiry into his family and previous history, I can find no cause for this disease, excepting the prevalence of this affection in that part of the West Coast from which he comes, and, from his description, the disease must be extremely common there, the popular remedy being to tie a piece of string over the seat of the constriction, and to tighten this from time to time until the toe drops off, this occupying about three months. This man is of very good physique, and, excepting his troublesome toes, is in excellent health. As he wished to have the toe removed on account of the discomfort it caused and his inability to walk, I amputated it at the metatarso-phalangeal joint, previously injecting cocaine. The operation was painless.

"On examining the excised portion, I found the constricting band had reduced the structures below it to great thinness. There was a greatly increased development of adipose tissue in the enlarged portion, giving the sensation of fluid before removal."

V.—Treatment of Lateral Curvature.

E. H. Bradford, of Boston, has written an interesting paper on this subject, and the paper may be thus briefly summarized :—

Treatment of the first stage : Postural treatment. Thorough drill daily in correct attitude and motion ; proper gymnastics in the muscularly weak cases. Recumbency in the feeble cases, supervision as to chairs, occupation, and attitude.

Treatment in the second stage : Treatment in the lighter cases similar to those in the first stage. Treatment in the severer cases

the same, but with the addition of methods of correction and retention appliances.

Treatment in the third stage : Generally no treatment. In severer cases corsets, self-suspension exercises.

It may be said that there are no brilliant results in treating lateral curvatures. Cases can only be relieved by persistent and painstaking effort, and rapid cures are not to be expected. They are eminently cases which make a demand on the sense of duty of a conscientious surgeon.

Dr. A. B. Judson, of New York ("Medical Record," November 1st, 1890), says that he has seen no reason to change his opinion as to the cause of rotation in lateral curvature of the spine promulgated by him some fifteen years ago. For detecting early rotation he palpates the chest between the two palms. This will reveal a difference in the diagonal diameters of the chest when the curvature is overlooked in the line of the spinous processes. Thus, in rotation to the right in the dorsal region the diameter of the chest from the angles of the right ribs to the left mammary line will exceed the diameter from the angles of the left ribs to the right mammary line. In treatment Dr. Judson seeks to "produce lordosis of the dorsal and lumbar regions, on the theory that the patient is thus led to remove the imposed weight, or a part of it, from the bodies of the vertebræ, which deviate widely from the median line to the articular processes, which, by virtue of rotation, remain comparatively near the median line." This is done by suspension on the curved backboard, and by using an air pillow (10 in. by 18), placed under the back when the patient is supine, so that the shoulders may lie between the air pillow and the pillow for the head, and the pelvis may hang over the lower edge of the air-pillow. He also makes use of posture, exercises, and recumbency in the treatment of these cases.

VI.—Treatment of Acute Torticollis.

According to Professor Phocas, of Lille ("Rev. des Mal. de l'Enf.," October, 1891), acute torticollis is far more common in childhood and youth than in adult or old age. He recognizes two main varieties : (1,) Acute torticollis following immediately a sudden movement of the head, and due to sprain of one or more articulations of the cervical vertebræ—acute traumatic torticollis ; (2.) Acute torticollis following exposure to cold, and due to slight cervical arthritis or to muscular rheumatism—acute rheumatic torticollis. In a few cases the acute traumatic variety may be due to partial rupture of muscles. In either of the two above-mentioned forms clonic contractions may be super-

added to the tonic contracture. The muscle involved primarily is usually the trapezius. As to treatment, hot applications are the best anodynes; massage of the contracted muscle is a more effectual remedy, and often gives immediate relief, but M. Phocas recommends particularly the application of a collar in the following manner: The patient is placed in a Sayre's suspension apparatus as for the treatment of cervical caries; he is then very slowly suspended partially. In this way the muscles are uniformly stretched, and their resistance gently overcome with little or no pain. A collar of moistened millboard is now applied, and retained in place by a few turns of bandage. The patient remains in the apparatus about ten minutes more, and when liberated is free from pain. In one case the collar was removed on the next day, and the symptoms had all disappeared.

Professor Phocas relates ("Revue d'Orthopédie," September 1, 1891) three cases of open incision of the tendon of the sterno-mastoid for wry-neck, and advocates a small incision in a vertical direction along the contracted tendon. After exposing the tendon he passed a grooved director beneath it and divided it. Subsequently he discovered a deeper tendinous band and smaller tendinous bands, which he also divided on the director. He does not think that these could have been successfully dealt with by the subcutaneous method. He claims for the open incision that it is attended with no risk, and that it is more efficacious than the subcutaneous section, but he admits that the cicatrix, especially in children, may become enlarged and visible, even though union without suppuration is obtained.

VII.—Congenital Club-Foot.

Rochard ("Revue d'Orthopédie," September 1, 1891) says opportunities of examining the anatomy of club-foot are infrequent. M. Rochard gives such an account in an infant eight days old, which died of cerebro-spinal meningitis. The right foot was in a state of extreme congenital varus (equino-varus). M. Rochard thinks these observations support the view that the deformity is the result of muscular contraction, a cause for which he believes was found in this case in a spina bifida which existed in the lumbo-sacral region. The tibialis anticus on the right side, and the peroneus longus on the left appeared to be the two chief factors in the production of the deformity.

Nicholas Grattan, of Cork, maintains that the treatment of the more severe forms of club-foot is attended with the greatest difficulty, first, owing to the cause of the deformity; secondly, owing to its tendency when corrected to revert to the old position. In many cases he treated

the tendinous fasciæ by stretching or wrenching, or a moderate tenotomy, using some apparatus to retain the foot in its new position. In patients over two years of age he excises or cuts through portions of the tarsus. He believes, as does Escerich, that club-foot is caused by an arrest of the fœtal unwinding of the foot, leg, and knee, and even thigh. It occurred to Grattan that he might, by means of his osteoclast, improve, by fracture and unwinding, some desperate cases. He fractured the tibia and fibula, with the osteoclast, close to the ankle joint, and again between the middle and lower thirds of the leg. Having completed the fractures, he improved the position of the foot by getting it more flat, and endeavoured also to unwind the extremities by rotating the foot and leg outwards. An iron back splint secured the leg and thigh in their new position. In about ten days the extremities were examined, and the leg rotated until the foot and the patella were in line. The iron splint was then applied until firm union had taken place. Five operations were thus performed, with presumably good results. He does not permit his patients to wear shoes, but insists that they run about with bare feet only. If the foot shows any tendency to revert to its old position he fastens an elastic cord on the outside of the foot by means of adhesive plaster, while the other end he attaches by a bandage below the knee.

T. N. Fitzgerald, at the second inter-colonial Medical Congress of Australasia, describes a new operation for the treatment of club-foot. He operated upon twenty cases, and had met with marked success in nearly all. No serious results occurred in any case. He believed the principal factor in producing the deformity to be impaired nutrition, and he maintained that the operation should be directed to improve the nutrition of parts.

He thus describes his operation: "An Esmarch bandage is applied from the toes to above the knee. The following tendons are then divided: the tendo Achillis close to its insertion, the tibialis anticus just above the ankle, the tibialis posticus about an inch and a half above the inner malleolus, in the usual way. When this part of the procedure has been completed, it becomes comparatively easy to judge the amount of resistance offered by the contraction of the ligaments and fibrous structures of the sole. This portion of the tenotomy being concluded, the plantar fascia, the calcaneo-scaphoid ligament, the deep ligaments, the abductor pollicis and all resisting structures down to the astragalo-scaphoid articulation are freely divided. I often find it necessary to sever some of the anterior fibres of the deltoid ligament. The astragalus is first divided through its neck; to effect this, a valvular incision, just sufficiently large to admit the

chisel, is made with the tenotome, obliquely down to the bone, the knife being entered on the outside of the foot, slightly inclined from above downward, a little backward and inward, behind the calcaneo-cuboid articulation, so that it passes in its course through the foot immediately in front of the ankle-joint. The tenotome being withdrawn, the chisel, firmly held, is pushed along the channel the knife has just made, so that it impinges on the bone at a spot where the astragalus may be said to narrow to a neck. The chisel enters this constriction, and, with a little force, by pushing and twisting, it is manipulated in such a manner that the head or part of the bone which enters into the astragalo-scaphoid joint becomes detached from the body. The inner aspect of the foot is now attacked, and the scaphoid freely broken up subcutaneously. The os calcis is now subcutaneously divided obliquely, at a point just behind the posterior articulating surface—in fact, separating the bone into nearly equal halves. A few drills are put into the cuboid to help nutrition, and this finishes the actual operation.

The next aim is to mould the foot into a normal position, and to do this considerable force is required, and it is well to have the help of a trustworthy assistant, so as to prevent fracturing the tibia or fibula close to the joint, or separating the epiphyses. The rotation of the tarsal bones may be assisted by enrolling the foot in a wet towel, or the member may be levered into position by means of a flat piece of wood firmly attached to the sole of the foot, and the os calcis forced into place. By these means, and the exercise of a little patience, it will be found that the foot can be nearly fashioned into good position. Any little fragment of the scaphoid that sticks out, or is unduly prominent, may be hammered back by a mallet, interposing a roll of bandage between the foot and the blow. All that now remains is to roll the foot in antiseptic wool, and apply firm but even pressure from the toes to the knee. The limb is put in a light trough splint, with a foot-piece so adjusted that it keeps the foot in good position, *i.e.*, at right angles with the leg; the Esmarch tourniquet is then removed.

At first sight this operation no doubt appears rough and unsurgical from the amount of force that is required to twist the foot, but the same is the case with many other proceedings the utility of which is not in the least doubted. A question that naturally arises is, Whether there is not, in breaking up the scaphoid and chiselling off the head of the astragalus, a risk of separating the fragments from their attachments and nutritive supply thus setting up necrosis? Such has never occurred to me, and I think the danger apprehended rather

chimerical, provided that the cutting is strictly subcutaneous and that absolute cleanliness is rigorously observed."

Painful Flat-Foot.—Dr. E. Kermisson discusses the various theories regarding the pathogenesis of flat-foot, and the conclusion he arrives at is that without doubt alteration of the bony structures occurs as the final result of the primary conditions, whether these latter are due (Duchenne) to insufficiency of the peroneus longus muscle lesions of the cartilages (Gosselin), or weakness of the ligamentous apparatus (Lefort, Tillaux). It is the position of valgus which gives rise to the interference with locomotion in these cases, and not the flat foot. The different methods of correction by means of osteotomy are justified by the existence of the bony affection. Two cases are reported, the one being extirpation of the os navicularis, with a good functional result, and the other a cuneiform resection of a portion of the medio-tarsal joint, after the method of Ogston.

OSTEOMALACIA. *F. S. Eve, F.R.C.S.*

Hofmeier reports the case of a virgin, aged thirty years, who had osteomalacia of three years' standing, the disease being progressive at the time of operation, as shown by the presence of severe pains in the pelvic bones, inability to walk, and marked pelvic deformity. Menstruation regular and painless. Four weeks after removal of the ovaries, the patient could walk without assistance, and the pains were much less severe ; six weeks later she felt quite well, had no pain, and could walk a long distance. The pelvic organs were normal. The ovaries were atropied, as in a woman after the menopause, and presented a similar appearance microscopically, only a few ovisacs being seen. The case was interesting, not only because the patient was a virgin (hence pregnancy could not be regarded as an etiological factor), but there was no disturbance of menstruation, nor evidence of pelvic congestion.

As regards the effects of oöphorectomy under such circumstances, the writer admits, with Fehling, that it is impossible to give a satisfactory explanation.

Fehling has collected twenty other cases of oöphorectomy for osteomalacia, in none of which was there a failure on the part of the operator to secure at least a temporary benefit.

REFERENCE.—"American Journ. Med. Sci.," July, 1891.

OTITIS. (See "Ear.")

OTORRHŒA. (See "Ear.")

OVARALGIA.

Synopsis.—(Vol. 1891, p. 47.) Pulsatilla Wine containing 10 drops alcoholic Extract of Pulsatilla to the tablespoonful.

OZÆNA. (See "Rhinitis.")

Synopsis.—(Vol. 1891, p. 11.) **Aristol** as an insufflation instead of Iodoform.

PANCREAS (Surgery of). *A. W. Mayo Robson, F.R.C.S.*

Drainage has been employed successfully during the year on at least three cases of pancreatic cyst, under the care of Mr. Pearce Gould[1], Mr. H. Littlewood, and Dr. Maurice H. Richardson[2] respectively.

In Mr. Gould's case the tumour was opened anteriorly, and then the cyst was cut down on from the left loin, and drained through the posterior opening, the sinus closing within the month.

It seems advisable to explore through an anterior incision first, and then the wall of the cyst can be pushed backward and made to project below the twelfth rib, where it is easily opened, the opening being behind the peritoneum.

The permanent adhesion of the left end of the pancreas to the abdominal wall in this situation is less likely to lead to subsequent mischief than is an anterior adhesion between the stomach and transverse colon.

In Dr. Richardson's case the symptoms were very characteristic. The patient was a large powerful man, aged fifty, who dated his illness from a period about five years earlier, when he felt something give way in the epigastric region while lifting a heavy weight; shortly afterwards he had a severe fall. Three or four months after this he began to suffer from attacks of pain in the epigastrium; after the pain passed off he often had diarrhœa. After nine weeks the attacks grew less frequent. Nine months before he came under treatment he had a very bad attack, and was jaundiced; since then the bowels had been loose, and he had lost nearly four stones in weight. In the epigastrium there was a slightly elastic tumour, the size of "a four-year-old child's head." It extended under the margin of the ribs, down to the umbilicus, was deep-seated, slightly moveable, and moved about four inches on deep inspiration. No fat was found in the stools. The patient having been purged, the colon was filled with water, and was ascertained by palpation to be in front of the tumour; the stomach, being filled with air, was likewise found to be in front of the tumour, which was then diagnosed to be a pancreatic cyst.

Analysis of the Pancreatic Secretion.—No exact analysis of the pancreatic juice in the healthy human subject having been published, advantage has been taken by Dr. Zavadski[3] of a case recently operated on in Warsaw to obtain such an analysis. The fluid was a somewhat tenacious, yellowish, turbid liquid, with a marked alkaline reaction.

On analysis it gave: Water, 86·405 per cent.; organic compounds, 13·251 per cent.; albuminoid bodies, 9·205 per cent.; extractive matters soluble in alcohol, estimated as nitrogen, 0·827 per cent. Salts: carbonates, chlorides, phosphates, and sulphates of sodium, potassium, calcium, and iron, 0·344 per cent. At a temperature of 100° F., the juice actively converted starch into maltose, egg albumen into peptone, and olive oil into an emulsion. On the whole, the human pancreatic juice was found, on comparing it with that of other animals, to resemble most nearly that of the dog, according to Schmidt's analysis.

REFERENCES.—[1]A. Pearce Gould, "Lancet," vol. ii., p. 290, 1891; [2]M. H. Richardson, Suppl., "Brit. Med. Jour.," Feb. 28, 1891; [3]Zavadski, "Lancet," vol. i., p. 248, 1891; [4]Ernest T. Neve, "Lancet," Sept 19, 1891; [5]G. Newton Pitt and H. H. A. Jacobson, "Lancet," June 13, 1891.

PARALYSIS AGITANS. *Græme M. Hammond, M.D., New York.*

In regard to the treatment of this affection Dr. Peterson[1] considers a combination of **Codeine** with **Hydrobromide of Hyoscine** very effectual in controlling the tremor and the general feeling of restlessness. He recommends a pill containing from ½ a grain to 2 grains of codeine and the $\frac{1}{100}$ of a grain of hyoscine hydrobromide. One pill should be given two or three times a day.

Bidon[2], after referring to the two types of attitudes in this disease—one in which the body is flexed, and one in which it is extended—reports a third type in which the body and extremities were extended, while the head and neck were flexed.

REFERENCES.—[1]"New York Med. Journ.," Oct. 11, 1890; [2]"Brit. Med. Journ.," Feb. 28, 1891.

PEDICULOSIS PUBIS. *T. Colcott Fox, M.B.*

Brocq uses a lotion composed of 1 part sublimate in 500 of vinegar, which kills the nits, and is believed to remove them.

Alfred Fournier says it is more frequent in private practice and in the well-to-do classes. The symptoms are pruritus, prurigo, and maculæ cæruleæ. One treatment is to bathe, rub in ʒj to ʒij of mercurial ointment, and after two hours wash with soap and water. Repeat in forty-eight hours if the cure is suspected to be incomplete. After such inunction, change underclothes and bed linen, and fumigate outer clothing with sulphur. This treatment is dirty, and may salivate. Alternatives are a 5 per cent. **Ung. Calomel, Mercurial Baths, Corrosive Sublimate** lotion (aq. 400, alcohol 100, corrosive sublimate 1; or vinegar 600, corrosive sublimate 1). Nits are destroyed by vinegar diluted with a little water, and a metallic comb may be used.

REFERENCE.—A. Fournier, "Jour. des Mal. Cut. et Syph.," March, 1891.

Synopsis.—(Vol. 1890, p. 392.) A single application of Ether Spray is useful.

PERICARDITIS. *Frank W. Jackson, M.D., New York.*

Dr. Hermann Bronner[1] has recorded a very interesting case of purulent pericarditis, which was treated by incision and drainage. The patient was a girl, aged eleven, of perfect health until the attack which culminated in the pericarditis. She was taken suddenly with fever, vomiting, and pain in the region of the cæcum. For several days she had high fever, without anything definite to indicate the nature of her illness. On the fifth day signs of consolidation were discovered under her right scapula. On the twelfth day the pneumonia invaded her left apex. On the sixteenth day pus was found in her right pleural cavity, and evacuated by incision. The temperature fell to nearly normal, but the pulse remained at 140, and respiration at 45. Eight days later, the pulse remaining high and the respiration having become more rapid, a slight increase of the area of cardiac dulness and faintness of the heart sounds were noted, and pericarditis was suspected. In the course of the next two days dyspnœa became very great, and the increased area of cardiac dulness became unmistakable. Two days after the pulse suddenly failed, and could scarcely be felt. Removal of the fluid from the pericardium was absolutely indicated. Chloroform was given. Dr. Pridgin Teal passed a trocar through the fourth intercostal space, one inch to the left of the sternum to avoid the internal mammary artery. The fluid being found to be pus, Dr. Teal made an incision upward, using the trocar as a director, and carefully watching for any indication of the heart touching the knife; but, to use his own words, "the heart never seemed to come near either the trocar or the scalpel." Nearly two pints of sweet, thick pus escaped. The apex of the heart could afterward be felt beating against the tip of the little finger inserted in the opening.

A short drainage tube was left in the wound, and sublimate gauze pads used as a dressing. No ill effects of any kind were noticed upon the heart's action during the operation. The relief afforded by the operation was very great, but the temperature rose, and the pulse and respiration remained at 148 and 52. On the second day after the operation an injection of a solution of iodoform in sterilized glycerine was made into the pericardial cavity, without ill effects, and did not influence the pulse in the least.

Iodoform was also injected into the right pleural cavity, which still

discharged freely. The iodoform was discontinued after five days. Eleven days after the operation the pericardial sac was irrigated with a 5 per cent. solution of boric acid, at a temperature of 100°, a precaution being taken for free exit of the fluid from the wound by the addition of a second tube. This had no ill effect, the child sitting up and chatting while the irrigation was going on. This was repeated for eleven days, and never seemed to affect the heart's action in the least. The child, however, grew weaker, and died on the sixtieth day of the illness and the twenty-sixth day after the operation.

Bronner refers to the two cases of incision and drainage of the pericardium published by Dr. Samuel West and by Dr. Rosenstein as the only recorded cases of recovery, but to these must be added the case of Dr. P. Davidson[2], recorded subsequently to Dr. Bronner's paper, in which a boy of six years, with empyema and purulent pericarditis, recovered, after opening and draining the pericardium.

Dr. West[3], in commenting upon Dr. Bronner's case, makes some interesting remarks upon the treatment of purulent pericarditis. The dangers of surgical interference with the pericardium are greatly exaggerated; the only risk, wounding the heart, may, with care, be avoided. There is very little ground for fear in regard to washing out the pericardium. Exploratory punctures and paracentesis are much more risky than incision; but he has tapped the pericardium several times without a single misadventure. On one occasion he was alarmed by getting nothing but a jet of blood. He at once removed the needle; but the patient was greatly relieved, and rapidly improved. The dangers of the rapid removal of fluid are, he believes, for the most part imaginary.

REFERENCES.—[1]"Brit. Med. Jour.," Feb. 14, 1891; [2]"Brit. Med. Jour.," Feb. 21, 1891; [3]Ibid.

PERINÆUM (Repair of Rupture of). *R. Milne Murray, M.A., M.B.*

Various papers on this apparently interminable subject have appeared in this country and abroad. None of them seem to be of especial interest, save one by Lawson Tait, read before the British Gynæcological Society, and printed in the society's journal for August, 1891. He discusses the history of the operation described by him, and seeks to establish his claim for the originality of the method. The operation is described in great detail and is worthy of reference, but the limits of our space render it impossible for us to reprint it.

PERIOSTITIS. *F. S. Eve, F.R.C.S.*

Mr. E. Owen emphasizes the necessity of early incision. He says: "The lower end of the femur is a favourite region for acute periostitis

in children. The disease is usually marked by great constitutional disturbance—often with delirium ; there is, on comparing the two sides, a deep-seated, central thickening. Treatment must be prompt ; there should be no dallying with opium, salicylic acid, evaporating lotions, fomentations, or leeches.

Nor should the practitioner wait for fluctuation before using the knife. A clean-handed surgeon should not hesitate to cut down at once on to the swollen femur ; traversing the space between the ilio-femoral band and the tendon of the biceps, he will reach the bone without danger or difficulty. Delay, on the other hand, entails many and great dangers : pyæmia, necrosis, chronic suppuration, hectic, albuminoid disease, destruction of the knee-joint.

REFERENCE.—"Annals of Surg.," June, 1891.

PERITONITIS. *A. W. Mayo Robson, F.R.C.S.*

The question of surgical treatment by laparotomy is of the first importance in the consideration of any case of peritonitis, as is shown by the marked success which has attended laparotomy in traumatic, tubercular, puerperal, and other forms of peritonitis.

Dr. Osmolovsky[2] has collected two hundred and thirty-one cases of peritonitis treated by abdominal section. Of the number, seventy-nine were taken from German literature, forty from British, thirty-nine French, twenty-two American (U. S.), fourteen Polish, twelve Russian, eight Italian, etc. Of the total, seventy-five died, one hundred and fifty-four (67·2 per cent.) recovered, while in two cases the issue remained unknown. The writer divides his cases into eight groups :—

I. Traumatic Peritonitis (developing after surgical operations or accidental traumata).—Nineteen cases are tabulated, of which six died and thirteen (68·5 per cent.) recovered. The time of operation varied from two hours to four and a half months after injury.

II. Peritonitis due to Ulcerative Perforation of Abdominal Viscera (appendix, intestines, stomach, bladder).—Forty-three cases are recorded, of them thirty-three ending in death, ten (23·2 per cent.) in recovery. Of the ten, in eight a "complete cure," and in two an "improvement," was obtained.

III. Peritonitis due to Incarcerated Hernia and Intestinal Obstruction.—Twenty-seven cases are given, with thirteen deaths and fourteen (51·8 per cent.) "complete" recoveries.

IV. Peritonitis due to Bursting of Intra-abdominal Abscesses or Tumours (ovarian, etc.).—Thirteen cases, with three deaths and ten (77 per cent.) recoveries ; of the latter nine being "complete," one "ameliorative."

V. Puerperal Peritonitis.—Fourteen cases are recorded, with seven deaths and seven (50 per cent.) "complete" recoveries.

VI. Idiopathic Peritonitis and that of an Obscure Causation.—Twenty-four cases were found, with five deaths and nineteen (79·1 per cent.) recoveries, seventeen "cured," two "improved."

VII. Localized Peritonitis.—The group includes fourteen cases, with one death and thirteen (92·8 per cent.) "cured."

VIII. Tubercular Peritonitis.—Of seventy-seven cases of this description, seven ended in death, sixty-eight (90·6 per cent.) in recovery (forty-six "cures," twenty-two "improvements"); in two cases the ultimate issue was not stated.

General conclusions :—

(1,) Speaking generally, abdominal section constitutes the only reliable means for curing peritonitis.

(2,) Under a strict application of all antiseptic precautions, the operation is a safe one.

(3,) The frequent relatively high percentage of deaths in cases of peritonitis treated by laparotomy must be attributed mainly to the fact that the operation is usually resorted to only too late.

(4,) It may be firmly hoped that a routinary early performance of laparotomy will raise the percentage of recoveries very considerably.

(5,) Of all varieties of the disease, perforative peritonitis has up to the present given the lowest percentage of recoveries. Of all the forms this one requires the quickest surgical interference. Collapse does not contra-indicate laparotomy. Escher, Wylie, and Hall succeeded in saving their patients by having operated in spite of the presence of the symptom.

(6,) In tubercular peritonitis, abdominal section undoubtedly manifests a beneficial influence on the course of the disease. The explanation of the fact, however, remains yet to be found.

(7,) All cases of penetrating wounds of the abdomen should be treated by a possibly early laparotomy. The same may be said in regard to any traumatic peritonitis, including that developing consecutively to surgical operation. In Koberle's case peritonitis set in after ovariotomy, and was quickly cured by abdominal section performed on the third day of the disease. In Pavloff's case, the peritoneal inflammation developed after tying the internal iliac artery, the patient's life being saved by laparotomy on the fourth day of the symptoms.

(8,) Collapse should be regarded as an absolute contra-indication only in cases of tubercular peritonitis. In all other varieties of the disease it does not contra-indicate the operation, though its presence considerably lessens chances of recovery.

(9,) In cases of a general peritonitis, the abdominal incision must be free, in order to secure thorough examination and cleansing of the peritoneal cavity. In cases of a localized peritonitis, the incision should be short.

Dr. Krecke[5] has collected one hundred and nineteen cases of general peritonitis treated by laparotomy, with fifty-one recoveries. Of these cases, thirteen were puerperal, with five cures, and twelve were due to typhoid perforation, with five successes.

In typhoid perforation, if the operation have to succeed, it must be done early[11].

In acute septic peritonitis, as met with in childbed fever or after perforation of the bowels, or from the emptying of the contents of an abscess into the cavity, or after operative procedures or accidental traumatism, such as gun-shot wounds, stabs, etc., nothing short of an abdominal section can afford any chance of recovery, and this will not offer much prospect unless done very early.

Dr. Price, Dr. Wylie, and others, have taken a decided stand for early operative interference in this class of cases.

There is no want of results to show that operations, when done early, are of benefit; but, on the contrary, late operations are universally fatal, for, as Hadra[9] has said, "well developed acute septic peritonitis, as a rule, may be considered fatal, with or without surgical interference."

Nothing in surgery is more wonderful than the beneficial effect of laparotomy on even advanced peritoneal tuberculosis, and on several occasions I have operated and been the means of restoring patients to health who were apparently beyond all hope of cure.

We must simply accept the facts, as hitherto no satisfactory explanation has been given as to the *modus operandi*.

Dr. Symes[3] remarks that the death-rate in over one hundred and thirty cases was but 3 per cent. Sepsis is, it is urged, less likely to occur than in abdominal sections where the serous membrane is healthy, on account of the pathological changes which have taken place in the membrane. Tuberculous infection of the wound does not occur. Established (not advanced) pulmonary tuberculosis is an indication for, and not against, the operation, for the improvement thus gained enables the patient to resist the lung disease all the better, and, if the phthisis be incipient, cure may take place. In short, abdominal section exerts a most beneficial influence on tuberculous peritonitis, resulting in cure in a large proportion of cases, and in a marked improvement in nearly all.

In chronic idiopathic peritonitis, Dr. Carvi[12] employs permanent

drainage, a drainage tube being passed into the abdomen at one side and out at the other, the ends being closed by stoppers and the fluid being drawn off at first daily and finally once a week. In one case recovery followed on this treatment, which began in March, 1888, and ended in March, 1889.

REFERENCES.—[1]Roswell Park, "Ann. of Surg.," July, 1891 ; [2]Osmolovsky, "Ann. of Surg.," Feb., 1891 ; [3]Parker Symes, "New York Med. Jour.," Feb. 7, 1891, and "Practitioner," April, 1891 ; [4]Mayo Robson, "Brit. Med. Jour.," 1891 ; [5]Krecke, "Lancet," p. 824, Oct. 10, 1891 ; [6]Malvoz, Suppl., "Brit. Med. Jour.," Oct. 10, 1891 ; [7]Harrison Cripps, "Ann. of Surg.," March, 1891 ; [8]Dunning, "New York Med. Jour.," Aug. 8, 1891; [9]W. E. B. Davis, "New York Med. Jour.," April 4, 1891; [10]Barbacci, Suppl., "Brit. Med. Jour.," Sept. 26, 1891 ; [11]Louis, "Prov. Med. Jour.," Feb. 2, 1891 ; [12]Carvi, "Ann. of Surg.," Nov. 1891.

Synopsis. —(Vol. 1890, p. 399.) **Rest**; liquid diet with meat juices as well as milk; **Opium**, gr. ¼, with **Ext. Belladonn.**, ½, every two hours, and if pain is unchecked, give **Opium**, gr. j, as a suppository twice during the twenty-four hours; injection of half to a pint of **Warm Water** may be used daily. As an aperient later on, ℞ Ext. Belladonn. gr. ½, Ext. Nuc. Vom. gr. ¼, Aloe Pulv. gr. ½ or ¼, Rhei gr. ½ to j, M. ; Ft. Pil. ; to be used once or twice in twenty-four hours and to be stopped if pain comes on ; Garrod's **Compound Sulphur Lozenge** or equal parts of **Confections of Sulphur** and **Senna** may be used as aperients. Some recommend large doses of **Salines** without opium.

PERTUSSIS.

F. de Havilland Hall, M.D.

In the "Medical Annual" for 1890 (p. 527) Sonnenberger's recommendation of **Antipyrin** in whooping cough was mentioned. Recent experience, however, has shown that antipyrin is by no means always innocuous when administered to children, and some cases of poisoning have been reported. The drug must therefore be given with caution.

Acetanilide[1] (antefebrin) has been used with advantage as a nerve sedative and antispasmodic in whooping-cough. The dose is from ½ to 5 grains three times a day, according to the age of the child.

A writer in the "Lancet"[2] asks the question whether **Phenacetin** is a remedy in whooping-cough, and Dr. R. Heimann answers the question affirmatively, having used the drug experimentally in a case in which antipyrin entirely failed. The success was so surprising that he administered phenacetin in two other cases. It reduced the number of paroxysms, which had been from ten to fifteen per diem, to three, and on some days they entirely ceased, only reappearing at night, when no phenacetin was given. The dose for a child three years of age would be 1½ grains every three hours.

Rothe[3] speaks highly of a combination of **Iodine** with **Carbolic Acid**

in the treatment of whooping-cough. He says that he has treated hundreds of cases, and cannot remember one in which the affection lasted longer than four weeks. The mixture he employs is as follows :—

℞ Acid. Carbolic.	gr. xv	Tinct. Bellad.	gtt. xxx
Sp. Vin. Rect.	gr. xv	Aquæ Menth. Pip.	℥ ij
Tinct. Iodi	gtt. x	Syrup. Opiat.	gr. cl

M. A teaspoonful of this is given to children over two years of age every two hours.

Terpine[4] has been found useful in diminishing the violence and duration of the paroxysms, and hastening the cure of the concomitant bronchitis. Talamon gives it in doses of 10 to 15 grains a day for adults, and corresponding doses for children. **Common Thyme**,[5] which was recommended in whooping-cough three or four years ago by Dr. S. B. Johnson, is regarded by Dr. Neovius, who writes a paper on the subject in a Finnish medical journal, as almost worthy of the title of a specific. During an epidemic of whooping-cough he had ample opportunities of observing its effects, and he came to the conclusion that if it is given early and constantly it invariably cuts short the disease in a fortnight, the symptoms generally vanishing in two or three days. They are, he finds, liable to return if the thyme is not regularly taken for at least two weeks. Regarding the dose, he advises that a larger quantity than Dr. Johnson prescribed be taken. He gives from 1½ ounce to 6 ounces per diem, combined with a little marsh-mallow syrup. He never saw any undesirable effect produced, except slight diarrhœa. It is important that the drug should be used quite fresh.

Professor Emil Ungar[6], of Bonn, advocates the free use of **Quinine** in whooping-cough, having used it with much success during several epidemics during the last six years. He attributes the great differences of opinion as to its value which have prevailed amongst previous observers to the difference in the dose employed. Large doses are necessary, and, suiting the exact quantity to the age of the patient, he advises the use of from 16 to 22 grains per diem, in divided doses. Even to children below three months of age he would administer ¾ of a grain at each dose. These large quantities are only given for a few days, and as improvement begins the dose is diminished, and is given twice or only once a day instead of three times. This diminution should be effected slowly. The curative effects of quinine, are not apparent immediately, except in a few instances. As a rule, from three to six days elapse before the severity of the attacks begins to be diminished and the vomiting to cease. The disease then appears to run a milder course, and at the end of a fortnight the attacks are slight and infrequent. The tendency to complications, broncho-pneumonia.

etc., is lessened, and improvement may be looked for in the large majority, though not in all cases.

Dr. J. Reynolds[7] endorses Professor Ungar's views, and says that for the last fifteen years he has treated every case of whooping-cough occurring in his practice by the administration of large doses of **Quinine**. He usually gives the quinine dissolved in hydrobromic acids, and he adds a little bromide of potassium, as this seems not only to help to allay the cough, but to prevent quinism. In the case of a child three years old he gives 3 grains every four hours.

Dr. Robertson[8] has had better results from pure **Benzole** than from any other remedy. It is of equal benefit in the adult and child; 2 minims in mucilage are sufficient for a child six months old, and 5 minims in mucilage, on sugar, or in capsule for adults. Whenever the benzole odour is observed in the breath of the patient, then all anxiety as to the result may be allayed.

Dr. Cachazo[9], having noticed the striking benefit produced in a case of whooping-cough after **Vaccination**, tested the action of the vaccine virus in five extremely severe cases. Dr. Cachazo vaccinated each of these cases; and the situation was entirely altered as soon as the febrile symptoms of the vaccination commenced. The coughing almost entirely ceased, and was then simply of a catarrhal character, and disappeared perfectly after eight or ten days. During the existence of the vaccine disease the patients were treated with inhalations of a 1 per cent. carbolic acid solution. Dr. Cachazo has nothing to suggest as to how the whooping-cough is affected by the vaccine virus.

REFERENCES. — [1]"Medical Record," July 6, 1889, p. 21; [2]"Lancet," vol. ii., 1889, p. 811; [3]Ibid., vol. i., 1889, p. 701; [4]"La Médicine Moderne," July 24, 1890; [5]"Lancet," May 9, 1891; [6]"Deut. med. Woch.," No. 18, 1891; [7]"Brit. Med. Journ.," vol. i., 1891, p. 1160; [8]"Lancet," vol. ii., 1891, p. 289; [9]"Therapeutic Gazette," Dec. 1890, p. 838.

Synopsis.—(Vol. 1891, p. 367.) **Oubain**, gr. $\frac{1}{100}$ every three hours for a child of 5 years. **Terpin Hydrate**, gr. 20 to 45 daily. **Ext. Ergot**, fl. gtt. 5 in **Wine** or **Brandy** every two or four hours for a child 3 months old. **Resorcin** 2% aqueous solution sprayed into nose, pharynx and larynx every two hours. **Nitric Acid** is useful as a tonic. **Chloral Hydrate** diminishes the violence of the symptoms but does not lessen frequency of attacks nor shorten them. **Bromoform**, gtt. 2 to 5, given three or four times daily. Drawing the lower jaw downwards and forwards may arrest the spasm. **Eucalyptus Oil Spray**, *e.g.*, R Eucalyptus Oil ʒij; Terebene ʒij; Sp. Vin. Rect. ʒiss. The spray is used half an hour before each meal and at bedtime, together with internal use of R Terebene, gtt. 1; Magnes. Carb. gr. 2; Tinc. Camph. Comp. ♏ 10; Aq. ʒj or ij, M. Sig. Every three hours for a child from 2 to 3 years of age.

Phenacetin, gr. 6, in four doses for a child 3 years of age (p. 45).

PHARYNGITIS (Chronic).

Synopsis.—(Vol. 1891, p. 370.) **Trichloracetic Acid** applied on a probe to mucous membrane. Application of cautery to nasal mucous membrane after previous use of **Cocaine**, 10%. For mere astringent action **Trichloracetic Acid** dissolved in equal weight of **Glycerine** with a little **Iodine** and **Iodide of Potassium** added to throat being painted with the mixture. If veins be much enlarged they are destroyed by the galvano-cautery.

Hydrastis Canadensis Liquid Extract as local application (p. 32).

PHTHISIS. *R. Shingleton Smith, M.D., B.Sc.*

Since our last annual report an enormous accumulation of opinions on, and experience of, the nature, properties, and uses of **Tuberculin** has been published. The history of the rise and fall of tuberculin is that of one of the most remarkable medical events of modern times. The extravagant expectations which followed the premature announcement of Koch's discovery would necessarily lead to disappointment; the hopes of the sanguine patient and of the too easily led scientific observer were soon found to be based on an altogether unreasonable expectation, and adverse criticisms from one and another flowed so freely that the fluid, for which all the world was eagerly pining in feverish expectation only nine or ten months ago, is now much abused but rarely used.

Detection of the Bacillus.—The following procedure for the detection of the tubercle bacillus[1] may be of universal utility. It is not unusual to be obliged to examine many specimens before an opinion as to their presence or absence can be pronounced, and it is with a view to shortening this laborious process that Biedert again publishes an account of a method which he described years ago and has found very useful. The sputum is collected, if possible, to the extent of a tablespoonful; or, if more is available, it is thoroughly mixed with a glass rod and the same quantity taken. It is then treated in the cold with two tablespoonfuls of water, and with 4 to 8 drops of a standard soda solution according to the consistence of the sputum. It is afterwards boiled under continued stirring in a capsule, to which 4 to 6 tablespoonfuls of water are added, until a fairly fluid product is obtained. This is allowed to stand for two days in a high conical glass, so that all the organized particles together with the tubercle bacilli, may settle to the bottom. The supernatant liquid may now be decanted off, and from the sediment small pieces of solid matter extracted with a platinum needle, and spread upon a cover class. In the course of liquefying with alkalies, mucus and albumen lose their viscosity, and it is therefore advisable to spread a little of the original sputum upon the cover-glass to retain the particles so taken. The staining is carried out with

carbol-fuchsin solution, and the bacilli decolourized with 25 per cent. solution of sulphuric acid without the use of alcohol.

Disinfection of Tuberculous Sputum.—Dr. Martin Kirchner[2] points out that the general consensus of opinion has come to regard the sputum of tuberculous patients as the ordinary means by which tuberculous disease spreads from one individual to another. In many of the large military establishments in Germany it has been shown that tuberculous disease has been very wide-spread amongst the nurses and attendants upon the sick, and stringent rules are already in force in many such places to prevent the indiscriminate disposal of sputum. Tubercle bacilli are more resistant than some other micro-organisms to the action of some antiseptic fluids, but are very easily destroyed by others ; 4 per cent. **Carbolic Acid** with the addition of 2 per cent. of **Hydrochloric Acid;** 2 per cent. and 5 per cent. of **Sulpho-Carbolic Acid,** or 10 per cent. of **Creolin,** will suffice to render tubercle bacilli innocuous in a very short time. Caustic soda and potash on the other hand, and 5 per cent. of permanganate of potash have no effect, nor is a solution of 1 in 1,000 of corrosive sublimate sufficient, owing to the highly albuminous character of the sputum in which the bacilli are contained. It has now been proved that tuberculous sputum may retain its infective properties for ten months even after decomposition or drying up. It must, therefore, be equally active as it lies in the various receptacles which have been devised for its reception.

Etiology.—Dr. R. Thorne Thorne[3] directs attention to the dwelling-house in relation to tuberculous consumption.

The most salient points to which he adverts are summarized as follows :—

Conditions of Dwelling-House tending to the Promotion of Tuberculous Consumption.

(1,) A soil either (*a*,) naturally damp and cold ; or (*b*,) subject to the influence of the rise and fall of a subsoil water lying within a few feet of the surface.

(2,) A dwelling-house of which either the foundations, the area they enclose, or the walls, are, by reason or faulty construction or otherwise, liable to dampness.

Conditions of Dwelling-House tending to the Prevention of Tuberculous Consumption.

(1,) A soil which is dry (*a*,) naturally ; or (*b*,) freed by artificial means from the injurious influence of dampness, and of the oscillations of the underlying subsoil water.

(2,) A dwelling-house so constructed as to be protected against dampness of site, foundations, and walls.

(3,) Such immediate surroundings of the dwelling-house as tend to prevent the free movement of air about it, and its ample exposure to the influence of sunlight.

(4,) Such structural defects as would prevent the maintenance within all parts of the dwelling-house of ample movement of air by day and by night, and free exposure of its habitable rooms to daylight.

(3,) Such open space on at least two opposite sides of the dwelling-house as shall secure ample movement of air about it, together with its free exposure to the influence of sunlight.

(4,) Such construction of the dwelling-house as will secure for its habitable rooms and throughout its interior free movement of air by day and by night, and the free access of daylight.

The frequent occurrence of phthisis in numerous members of the same family living in the same house, and sometimes in individuals of different families occupying the same house, either together or in succession, strongly suggests the idea that the house rather than heredity is responsible, that it is the contagious virus in the house itself retaining its vitality for long periods (possibly aided by the transmission of an inherited tendency), which is really the cause of the disease.

Now that we are beginning to believe in the specific nature of phthisis, we find that the evidence of contagion rapidly accumulates, and the necessity for disinfecting agencies of a thorough and penetrating kind as applied to houses is becoming daily more apparent, inasmuch as "a house in which the disease has existed remains a centre of infection for an indefinite time"[4].

The relative immunity from pulmonary *phthisis in Colorado*, and the reasons for this, have been discussed by Dr. H. B. Moore[5], of Colorado Springs. The presence of any specific germicidal effects in high altitudes not being admitted, we must look for the reasons for immunity in some change in the individual whereby he loses his susceptibility, or, in other words, no longer presents a ground adapted to the reception or growth of tubercular seed, or, as the bacteriologist would put it, he ceases to be a suitable culture medium. These changes in individuals living in the immune areas of Colorado are due to the following essential climatic peculiarities, whose effects and therapeutic significance are briefly considered in the order named: Atmospheric attenuation, dryness, purity, increased opportunity for out-of-door life, and sandy, porous soil.

After an interesting discussion of these considerations he concludes his paper as follows: "In all ordinary cases of phthisis pursuing a

chronic course, nature makes strong and repeated efforts at self-cure, the tubercular mass frequently becoming encysted and shrinking into a hard, atrophied, innocuous mass. When these efforts are not successful, the repeated attempts at fencing in and curing are not less evident, both clinically and post-mortem. Thus we see that phthisis is not a disease that is necessarily fatal, and it appears that these climatic influences which we are considering are just sufficient to turn the balance in assisting nature on the local process, and to put the stamp of success on what she herself so earnestly attempts. I know of no words that better express what may be expected in properly selected cases coming to Colorado than these by Dr. Knight, of Boston: 'It is perhaps not too much to say that the prognosis in this class of cases (early apex disease) has been changed from very bad to very good.'"

Certain conditions that modify the virulence of the bacillus of tubercle have been investigated by Dr. Arthur Ransome[6]. These are too few in number to justify the statement of positive conclusions; but so far as they extend, they go to prove that fresh air and light and a dry sandy soil have a distinct influence in arresting the virulence of the tubercle bacillus; that darkness somewhat interferes with this disinfectant action; but that the mere exposure to light in otherwise bad sanitary conditions does not destroy the virus.

Dr. W. S. Lazarus Barlow[7] attempts to show that some relation exists between the *temperature of phthisis and that of the external air:* "It is a generally accepted truth among physicians especially qualified to give an opinion on the subject, that consumptive patients enjoy better health in all respects during the winter months than during the summer months. And this, too, allowing for the facts that hæmoptysis is more common in hot weather, and that the heat itself is likely to increase the night-sweating. Certainly in late spring and early summer there apply for admission to hospital a number of patients who, having been under observation and treatment as out-patients for a considerable time, nevertheless have such a rapid increase in their symptoms that they are no longer fit to be out-patients, and are easily recognized as suffering from very active or acute phthisis.

"Now, have these two last facts anything in common? Is there any cause which, operating for the benefit of patients at Davos, operates for the benefit of patients in England during the winter, and ceases to operate or is replaced by a damaging cause during the summer months? In a word, is there any relationship between the temperature of phthisical patients and that of the external air? To determine that question is the object of the paper."

His conclusion is as follows: "Speaking broadly, therefore, the temperatures of patients afflicted with acute phthisis vary with the external temperature, and consequently their general health is better when the weather is cold. Now what is true of the greater is also true though in a lower degree of the less, and consequently I think we are warranted in assuming that the same holds good with chronic phthisis. As cases of chronic phthisis are those especially for which climatic treatment is advocated, so far as this paper goes it lends support to treatment in Davos and the Engadine in preference to Madeira and South Africa. As far as actual temperatures on individual days are concerned, I have not satisfied myself that I can trace any definite relationship. Where differences are so small as they are in the variations of human temperature, it is not likely that anything but a more prolonged change of external temperature would give evidence in the human temperature chart, and consequently the failure of correspondence on definite days need hardly be wondered at.

Dr. Karl von Ruck[8], of Asheville, N.C., has done good service in directing attention to the detrimental effects of over-exertion in pulmonary phthisis: "It is truly pitiful to see such patients literally drag themselves about, exhausting what little strength and recuperative power they may still possess; and more so yet, to see how, under the mistaken association of exercise with the necessary out-door-life, their wasting becomes more evident from day to day, their steps less secure, their frames more stooping, their stopping 'to catch breath' more frequent, and the hectic flush more distinct upon their sunken cheeks, until, finally, from utter exhaustion, or from resulting relapses and complications, they are obliged to keep to their house and room. But even here they resort to indoor gymnastics—swinging dumb-bells or Indian clubs, or box against an imagined foe in the form of a suspended and inflated rubber air-bag or other contrivance calculated to offer resistance to their self-exhausting blows. Such sights are not uncommon in advanced cases, and the picture is only less painful in cases of the early stage, because there is still a relative appearance of well-being; but, so long as they tax their strength to the utmost in violent exertions, the advanced stage is reached surely and steadily, although the pace may appear less rapid."

TREATMENT.—On the question of disinfection in the living body Dr. Behring[9], of Berlin, writes: "There are four possible ways in which it is conceivable that this internal disinfection may be effected: (1,) By killing the disease-producing germs; (2,) By hindering their growth; (3,) By counteracting their disease-producing properties—pathogenic

organisms losing their power to produce poisonous products; (4,) By antagonizing the action of or destroying altogether the various toxic products produced by the bacteria.

"It is possible that the disinfecting action may not be exercised directly on the products, but indirectly on the cells of the body, and that the beneficial result may be due not so much to a destruction of the toxic products as to an increased resisting power conferred on the cells of the body, in virtue of which they are able to withstand the action of these products."

This question is of much interest in connection with the increasing use and abundantly-proved utility of such drugs as **Iodoform** and **Creasote,** which can be given internally in doses which may not only retard the growth, but may absolutely destroy the pathogenic germs.

In our articles in the "Medical Annual," 1890 and 1891, we very fully discussed the utility and methods of administration of this drug. Our statements have been confirmed by numerous contributions during the past year.

Of the drugs which are believed to have a really beneficial effect in phthisis, but of which it is difficult to obtain statistical evidence, probably **Guaiacol** stands at present at the head.

Given in capsule, or dissolved in some form of tincture and then diluted, it can easily be taken in daily doses of over 20 minims and continued steadily for many months. It has not been found to give rise to gastric irritation or cause any serious results otherwise, but on the other hand, a steady gain in weight and amelioration of the symptoms may be expected.

In consequence of the nauseous taste of creasote and guaiacol, and of the supposed difficulty of administration by the digestive tract, attempts have from time to time been made to give these drugs by hypodermic injection, and the experiments of Professor Picot[10], of Bordeaux, have attracted considerable attention. A solution of guaiacol and iodoform in sterilized olive oil and vaseline was used, each cubic centimètre of the fluid containing 1 centigramme of iodoform, and 5 centigrammes of guaiacol; the initial dose was 1 cubic centimètre, which was gradually increased to 3, and the injections were made at the supra spinous fossæ. No swelling or other local reaction was ever observed at the seat of puncture.

Prof. Picot sums up the effects of his remedy as follows: "The injections improve the general condition and lessen the cough and expectoration. In certain cases they dry up cavities and favour their cicatrization. In the second stage of phthisis they may make cough

and expectoration disappear, whilst causing the cessation of fever and night sweats. They also diminish the number of bacilli in the sputum."

Whether this is 'cure' or not time and clinical experience alone can show. Dr. Picot thinks a tuberculous patient should be watched for five or six—perhaps even ten—years before he is pronounced to be cured.

We have found no such difficulty in giving guaiacol by the mouth in much larger doses than have been given hypodermically. The doses given by Picot appear to the writer to be altogether inadequate, and could be far more readily increased if given otherwise than by injection.

Various solutions of creasote in oils have been suggested from time to time, but the general experience of them has been that if given in sufficient doses to be of service they give rise to much local irritation.

We can see little reason for the primary adoption of the hypodermic method for these drugs, and believe they are likely to be of far more value if given in sufficient quantity by the alimentary canal; when, however, any difficulty may be experienced in giving them freely, the hypodermic method may be adopted either alone or as an auxiliary to other methods of administration, and recently M. Diamantberger[11] has reported to the Paris Congress for the Study of Tuberculosis the favourable experience of himself and M. Weil on the use of guaiacol hypodermically. They employed a 50 per cent. solution in sterilized oil of sweet almonds, injecting on an average 2 Pravaz syringefuls in the twenty-four hours. They had made more than ten thousand injections, and never had an accident.

As an auxiliary to other more active methods the use of **Creasote mixed with Eucalyptus** in combination with compressed air, the patient being made to pass two or three hours each day in a cabinet of compressed air which contains the vapours of the drugs, has been found by Dr. Germain Sée[12] to be of service.

"Simple inhalations of creasote and of eucalyptus have no effect, nor is the compressed air by itself possessed of any advantage, but the combination of these two methods determines an enormous absorption of creasote by the entire pulmonary surface. Creasote administered by the stomach can only be supported by patients for a few weeks at the longest, when again it is usually impossible that subcutaneous injections of creasote be continued as long as is desirable; but creasote of all antiseptic measures is best supported in the form of vapours by inhalation, and patients may live for many months perfectly well in an atmosphere highly and permanently charged with these vapours."

Dr. Sée writes that the physiological effects are most favourable, and under its influence he has seen the return of appetite and improvement of general symptoms even in the most advanced cases of phthisis. Hæmoptysis, indeed, so far from being a counter-indication, has been rapidly cured, cough diminished, bronchial expectoration reduced, sputa lost their purulence and odour, and dypsnœa ceased, and auscultation shows that the bronchial *râles* disappeared entirely, although the *râles* due to the presence of cavities are naturally not affected. The compressed air charged with creasote is thus, according to Dr. Sée, a method of arresting the progress of the disease, and the author states that he has notes of twelve cases of phthisis which are practically cured.

The utility of creasote and guaiacol has almost entirely displaced **Iodoform**, but it should not be forgotten that there is a vast amount of evidence in its favour, and the experiments of Drs. Troje and Tangl[13], on the effects of iodoform on tubercle bacilli are of interest. They attempt to answer the following questions:—

(1,) Whether iodoform is capable of killing the tubercle bacillus outside the living organism or of weakening its virulence?

(2,) Whether iodoform interferes with or hinders the development of the tubercle bacillus when the two substances are simultaneously introduced into animal bodies?

(3,) Whether the healing action of iodoform is exerted in abscesses in animals, as it undoubtedly is in the human subject?

They come to the conclusion that iodoform is a true disinfectant as far as the tubercle bacillus is concerned; that it has a direct poisonous action upon the bacillus if left sufficiently long in contact; that hitherto this could only be demonstrated on the bacillus outside the living body; that the iodoform acts in a dry condition, in solution in olive oil, or in a glycerin emulsion.

Hypodermic injection of iodoform (1 per cent.) in oil of sweet almonds has been found by Dr. Gavoy[14] to give excellent results, causing arrest of the broncho-pulmonary catarrh of phthisis and corresponding improvement in the general health.

Dr. Roussel's[15] *treatment* has now been carried on for several years, and has given results which are decidedly encouraging. **Eucalyptol** is Dr. Roussel's favourite antiseptic, which he uses in the proportion of 20 per cent. for his hypodermic injections. Dr. Roussel employs pure sterilized olive oil, as this is a substance not foreign to the usual nutrition of the human body. It is easily saponified and assimilated by the organism. This is effected as readily by the capillaries of the skin as by the digestive tube. But oils of a mineral base, such

as petroleum, etc., are rejected as being artificial, irregular, and even caustic. The volatile essence contained in the sterilized olive oil travels with the blood till it reaches the lungs, and there, being placed in contact with the air the patient breathes, becomes diluted in the lungs, evaporates, and escapes with the breath. Thus the patient's breath smells of eucalyptol very shortly after the injection, and subsequently both the sweat and the urine have the same odour. When thymol is used, the odour is very pleasant, and several patients have been surprised and pleased to find how sweetly they were perfumed by this medical treatment.

Another new treatment of tuberculosis is that of Dr. Lannelongue[16]. This consists in applying **Chloride of Zinc,** which he alleges produces the transformation of morbid tissue and the almost immediate formation of connective tissue. He stated that he had used this method in twenty-three cases of tuberculous disease of the articulations, all of which had been cured. Of twelve cases of suppurating tuberculosis, two had resulted in cure, while the other patients, who were first inoculated on June 4th, were beginning to make satisfactory progress. Dr. Lannelongue stated that with his method there was a total change of tissue, and that persons who had been declared cured two months before were now pursuing their ordinary vocations, and that no relapse had been reported. Dr. Lannelongue's object is to bring about a sclerosis of the tubercular tissue; for, as chloride of zinc produces a fibroid change in the normal tissues of animals, so the same transformation is brought about by that agent in morbid tissues, including tubercular. The chloride of zinc is conveyed not into the actual tubercular foci, but outside and around them only, thus modifying as early as possible the peripheral tissues as well as the area already invaded by the bacillus. The elements of the morbid growth —destroyed by the chloride of zinc—are re-absorbed, while the young cells form a firm fibrous tissue.

In general a 10 per cent. solution had been injected, 2 or 3 drops of it several times round the diseased joint. He had used a 20 per cent. solution for the epididymis, and even 40 per cent. for the lungs. So far as function is concerned, the patients may be considered as cured, but a cure properly so-called can only be affirmed on proof of the disappearance of the bacillus. In any case the new tissue must tend to prevent systemic infection, and if the bacillus remains, a question which will have to be determined experimentally, it will at any rate be encapsuled in such a way as to be comparatively inoffensive and, so far as observations go, as to be incapable of doing any further mischief.

Dr. J. C. Thorowgood[17] writes : "The result of some twenty-five years' experience in the use of the **Hypophosphite Salts** has led me to the following conclusions based on records of cases. Hospital out-patients who came with cough and expectoration, perhaps blood-stained at times, and who presented *râles* at the lung apex, continuing there after some amount of bronchitis due to cold had been overcome by various remedies, improved in a way that surprised me on giving them 5 grains of hypophosphite of soda three times a day. Plain water or infusion of calumba were the vehicles usually employed in giving the remedy. The patients get better, and some would return in perhaps six months' time with the same symptoms and signs again, and would again improve on the hypophosphite treatment."

Dr. Zieniec[18] relates five cases of phthisis treated with **Brown Séquard's Extract,** injected subcutaneously. Dogs' testicles were used for the preparation of the fluid. No permanent benefit was apparent, and the author refrained from a more extensive investigation, seeing no further interest in the subject.

Several important communications on the *treatment of hæmoptysis* are a distinct advance on previous views of the subject. The Harveian oration of Dr. Andrew directed attention to the comparative independence of the two circulations, the pulmonary and the systemic, and hence the inutility of those drugs which control the tension in the systemic vessels. At the close of the oration Dr. Andrew drew one conclusion which is of the utmost importance : "If it be true," he says, "to use the statement of one of our best monographs on diseases of the lungs, that 'it is of great importance to relieve blood pressure in hæmoptysis,' then **Aconite** ought to be a much more efficient remedy for that affection than ergot."

Prof. Nothnagel[19] calls attention to the fact that the most essential feature in the treatment of hæmorrhage from the lungs is that the patient should be kept absolutely quiet, should not be allowed to speak, the room should be kept at a moderate temperature, and he should eat nothing warm, and his food should be of the most readily digestible character, cold milk being preferable to anything else ; and, in fact, Professor Nothnagel advises that for two days the diet should be confined solely to cold milk. It used to be taught that coughing was of assistance in removing the blood from the bronchi, but this is now recognized as being an extremely hurtful teaching, and the first attention should be directed towards suppressing coughing, and for this purpose **Morphine** is the chief remedy. When the hæmorrhage is only moderately severe, nothing further need be given to the patient

than morphine; but when, as occurs in many cases, the hæmorrhage does not spontaneously cease, then other remedies have to be given.

The drugs considered to be of service by Nothnagel are **Ergotin** and **Acetate of Lead.**

Antipyrin has been advocated by Cesari[20], of Modena, as a valuable local hæmostatic.

Night Sweats.—Dr. Combemale[21] sums up the results of his investigations on **Camphoric Acid** and **Tellurate of Soda** as follows :—

(1,) Tellurate of soda given in phthisis has a powerful effect on night-sweating.

(2,) Doses of 5 centigrammes daily produce the desired effect with certainty; smaller doses are less certain.

(3,) An odour of garlic may sometimes be imparted to the breath; its prolonged administration leads to some disturbances of digestion.

(4,) The drug succeeds in all stages of tuberculosis, but a larger dose is required in advanced phthisis than in the earlier stages.

(5,) The results obtained are more striking than with any similar remedy; camphoric acid, however, is the safer and better remedy for general use, possessing, practically, *no* disadvantages.

(6,) The action of both drugs would seem akin to an antiseptic effect, possibly producing destruction of the soluble products of the microbes.

(7,) The anhidrotic action is not confined to cases of phthisis.

Camphoric acid has also been strongly commended by Bohland[22], from observations made in the Clinic at Bonn. If 15 grains were given at 2 a.m. the sweating was satisfactorily checked.

Dr. Erede[23], of Genoa, calls attention to what he calls "the marked antidiaphoretic action of **Sulphonal.**" He says that if given in the early hours of the evening it almost invariably succeeds in suppressing or greatly diminishing the night sweats of phthisis. A dose of ½ a gramme, given in the form of pastille or suspended in some gummy vehicle, generally suffices. The largest amount given was 1 gramme; this failed of its effect only in a very few cases in which the disease was extremely advanced. As no untoward effects were ever noticed, even in very debilitated patients, Erede thinks that with proper precautions the drug might be pushed up to 2 grammes, the usual hypnotic dose. In many cases he observed that in discontinuing the sulphonal after a time the sweating did not begin again at once, but only after some days, when it was immediately checked by repeating the medicine.

Dr. Theodore Williams[24] sums up his views on the treatment of *pyrexia in phthisis*, as follows :—

(1,) The pyrexia due to tuberculization is best dealt with by deriva-

tive measures, such as counter-irritation, salines promoting secretion from other organs, and assisting expectoration.

(2,) That in the treatment of the pyrexia accompanying softening and excavation, measures which hasten these processes are found to be most successful, especially if combined with antiperiodics, such as quinine, salicin, salicylate of sodium, to moderate the fever.

(3,) That the use of medicines solely directed to lowering the temperature of the body without promoting increase in the natural secretions is generally inadvisable.

(4,) That our object in the treatment of phthisical pyrexia should be, not the reduction at all hazards of the temperature, but its lowering to the limits compatible with the comfort and well-being of the patients, and for this end that much may be done, in addition to the discriminating use of medicines, by the simple means of frequent food combined with stimulants and rest in bed.

Karl von Ruck[25], B.S. M.D., Asheville, N.C., writes as follows on **The Dietetic Management of Phthisis**. Success in the treatment of phthisis depends, other things being equal, upon the integrity of the organs of digestion and assimilation, and when these are hopelessly diseased, as from glandular atrophy and inveterate catarrh, amyloid degenerations, fatty or tubercular liver, extensive tubercular processes of the intestine, and infiltration and plugging of the lymphatic channels, mesenteric glands, etc., nutrition becomes impossible, and the case must end fatally on account of such complications alone.

Gastric catarrh never improves as long as large doses of strong alcoholics are given ; on the contrary, it grows worse, and I have made it a rule never to make use of whisky or brandy in such cases. Their withdrawal is often all that is necessary for improvement. If stimulants seem indicated, rest and ingestion of more food soon obviate their need, and only in extreme cases, in the partial collapse with subnormal temperatures, do I give them, and then per rectum when severe gastric catarrh is present.

To aid the digestive organs, and perhaps oftener to comply with the wishes of patients who have been accustomed to wine or beer with their principal meal, I allow a glass of red Hungarian or light Rhine wine, and really, I have seen patients who seemed to eat and digest better with the wine than without it. When wine or beer is taken with a meal, it must be to the exclusion of other fluids, including milk and coffee.

Chronic gastric catarrh, as such, requires most painstaking management of diet, and frequent washings through the tube to get any improvement. Rest of the digestive organs, by greatly limiting or

temporarily withdrawing food, is not to be thought of in phthisis, and I have never succeeded that way in any case. On the contrary, the amount of food must, as a rule, be increased, even under the protest of patients, and fermentation prevented by regularly washing away the mucus and the remains of the previous meal shortly before the one or two heartiest meals in the day. The foods must be simple, the hydrocarbons in excess, and the patient kept in bed, substituting massage for exercise.

In cases where I found no free hydrochloric acid in the stomach contents one or two hours after trial meals, I have seen much benefit from its regular administration in small doses every fifteen or twenty minutes for several hours after eating, and under its use, together with frequent washings, and in some very obstinate cases, I have finally succeeded in much improving the anæmia and nutrition, with re-establishment of the natural secretion. It was seldom, however, that I obtained a real cure of gastric catarrh, and when it occurred the cases were not severe or old ones. The results of treatment were, however, for the time being, satisfactory, as I obtained increase in flesh and strength, and a great amelioration in the gastric symptoms in all cases. What a continuance of such treatment might accomplish, if kept up for long periods, I cannot say. I have never had a patient willing to submit to washings any longer than was needful for material improvement; and they preferred to rest then, to resume upon the return of old symptoms, which was often necessary.

Digestive disturbances also occur, when considerable areas of the pulmonary circulation are more or less obstructed by reason of inflammatory deposits, fibroid and cicatricial changes, especially in the presence of a weak heart. They are then due to venous stasis and passive hyperæmia in the portal system, and give rise to a variety of symptoms, according to the degree of the inability of the right heart to properly propel its contents and empty itself, and also to the degree of co-existing emaciation. In the earlier stages, when by the wasting an equalization between the total blood quantity and the unobstructed lung surface and heart powers has been arrived at, the symptoms subside again. In more advanced cases absorption becomes seriously impeded, and almost entirely so, by pressure upon the absorbent vessels by the accumulating intestinal gasses, which on account of the overfilled portal system are no longer readily absorbed. Aspiration of the gas, through the rectal tube or by puncture, is then our only means to give temporary relief. Gastric and intestinal antiseptics and antifermentatives avail nothing, nor do opiates control the frequent attacks of diarrhœa more than momentarily, and I believe then more

by their action upon the heart than by their effect upon the bowel. Rest in the recumbent position, and cardiac stimulants, and the withdrawal of fluids as far as possible, have given me the best results. The diet should be light, dry, and limited in quantity until improvement sets in.

I have seen the above symptoms develop more especially after subsidence of acute processes of extensive character, and the cessation of high fever coincident with occurrence of subnormal temperatures, but also several times abruptly, as the result of physical over-exertion upon the heart.

Goat's Blood in Phthisis.—An entirely new point of view has been reached in the line of study opened by Drs. Richet and Hèricourt[26], who have endeavoured to confer on an animal liable to tuberculosis a more or less marked degree of immunity to tubercular infection by the transfusion or introduction into the economy of the blood of an animal refractory to tuberculosis. The results of these experiments were announced at a recent meeting of the Société de Biologie.

Dr. Lépine[27], of Lyons, on the supposition that goats are refractory to phthisis, has been experimenting on patients by injecting **Goats' Blood** or its **Serum** subcutaneously. He finds that subcutaneous injections of serum cause so large a surface to become painful that it is impossible to repeat such injections frequently. When, however, they are intravenous, they may be repeated every two or three days, 80 or 100 cubic centimètres being introduced each time. There is, too, practically no danger, and scarcely any pain, if the serum and all the apparatus are properly sterilized, and if the operation is conducted slowly. A goat in good condition will give 400 grammes of blood. This is drawn through a cannula inserted into the jugular vein, and is caught in a vessel half immersed in cold water. It is defibrinated, filtered through sterilized muslin, and then put into tubes attached to the circumference of a revolving disc, which is made to revolve by steam power two thousand times per minute for about forty minutes; after which, the separation of the corpuscles from the serum being complete, the latter is transferred to a sterilized vessel provided with an indiarubber tube issuing from the bottom and closed above with cotton-wool. The patient's arm having been disinfected and tied as for phlebotomy, a prominent vein is selected, and a very fine silver trocar inserted without dissection, which is by no means a difficult operation. This is cautiously connected with the indiarubber tube, and the serum allowed to flow into the vein very slowly. If the patient should feel malaise, the flow must be stopped by lowering the reservoir. The highest amount that Dr. Lépine has transfused at

one sitting has been 100 cubic centimètres. When the blood itself was transfused not more than 40 grammes could be borne, the patients complaining—for some not very evident reason—of extreme pain in the loins. Dr. Lépine does not as yet profess to be able to say how far this method of treating diseases by injecting blood or serum from an animal refractory to such diseases is likely to be successful; but it is, he considers, a promising idea, and he thinks it has the best chance of succeeding if the serum only is used, as the corpuscles appear to him, if anything, to hinder the good effect.

Dogs' Serum in Phthisis.—At a meeting of the Royal Medico-Chirurgical Academy of Naples on May 31st, Professor Semmola[28] presented a communication embodying the therapeutic results which he had obtained by means of subcutaneous injections of the **Serum of Dogs' Blood** in cases of phthisis. He commenced his clinical experiments on Feb. 10, 1891, in ten cases, immediately after Richet had published his researches on the power of the serum of dogs' and goats' blood to confer immunity against tuberculosis. Semmola chose dogs' rather than goats' blood, inasmuch as the dog is absolutely insusceptible to tuberculosis, whereas the goat occasionally falls a victim to it. In four of the ten cases the disease was in an advanced stage. The dose of serum injected daily was from 1 to 2 cubic centimètres. No unpleasant effect was observed except slight urticaria, lasting at the outside from two to three days, in one or two of the cases. In two cases in which there was extensive excavation no benefit followed, nor was there any improvement in a third in which, although the lesions were not very severe, the temperature was very high. This patient died soon afterwards. In the seven other cases the results were very encouraging. The course of the disease was absolutely modified, the fever subsiding in most cases, and weight being gained in all of them. In three the physical signs disappeared almost entirely, expectoration diminished, and the number of bacilli—which averaged from 20 to 23 in the field—fell to 2, and sometimes to 0. In all the cases there was an increase of respiratory capacity and in the amount of hæmoglobin. In conclusion, Professor Semmola, while not believing that an infallible remedy has yet been found for phthisis, urged on the Academy the desirability of testing the method by clinical experiments "on a vast scale."

Cantharidin has been recommended by Prof. Oscar Liebreich[29], who commenced his trials in man with the dose of $\frac{1}{50}$ of a milligramme in a case of a tumour of the œsophagus. The injection was painless, no redness around the point of puncture being observed next day, and no tenderness on pressure. The patient stated voluntarily that he could

cough much more easily. The dose was gradually raised in several cases until 6 decimilligrammes were attained, when symptoms of effects upon the uro-genital tract were observed. These soon disappeared after a few drops of tincture of opium. The solution of cantharidin for hypodermic use is made by the addition of some alkali which renders it soluble. The most convenient is potassium or sodium hydrate, of which 0·4 gramme is taken, with 0·2 gramme cantharidin; the mixture is dissolved over a water bath in 1000 ccm. water. The method of injection is that 1 ccm. of this solution (equal to 2 dcmg. of the substance) is injected into the back. The patient is allowed to go about his employment, but particular attention must be paid to the state of the urine and bowels. The injection may be given every second day; and if untoward symptoms arise, half the dose given on the next occasion.

Various other observers[30] have reported their experience of **Cantharadinate of Potash,** and it has been found that the method involves a very great risk to the kidneys, with little prospect of any amelioration of phthisis.

Henage Gibbs and Shurly[31] publish an account of twenty-seven cases of phthisis treated by the inhalation of **Chlorine Gas,** and the hypodermic use of **Iodine,** and **Chloride of Gold** and **Sodium.** They employ two modes of administering chlorine; the gas may be evolved from chlorinated lime by the addition of dilute hydrochloric acid. In a small apartment, ½ to 6 drachms of chlorinated lime are spread out on a plate, and 1 to 3 drachms of dilute hydrochloric acid slowly added. Before the gas is evolved, the atmosphere should be well charged with a spray of saturated solution of sodium chloride, about 2 ounces being necessary. The spray should be continued while the patient is present. The first sitting may last two minutes, while the subsequent ones may be increased to twenty or thirty minutes; one to four sittings daily are necessary. The other method, preferable for mild cases and for laryngeal phthisis, is the inhalation of chlorine water. It should be mixed with a saturated solution of salt in the proportion of from ¼ to ½, and from ½ to 2 ounces of the mixture may be vaporized at a sitting. The gas is practically irrespirable unless diffused in vapour of chloride of sodium. According to the authors, chlorine inhalations seem to be very efficient in preventing further caseation, as shown by changes in the sputum and the alteration in some of the physical signs. A varying degree of tolerance of the chlorine is observed from time to time. It sometimes causes nausea or vomiting if used too soon after a meal. For the hypodermic injection of iodine and of the chloride of gold and sodium,

a syringe with gold or platinum-plated needles is necessary. Owing to chemical action, it requires great attention to keep the syringe in good order. The gluteal region is used for injections, and the solutions are made with glycerin. The iodine is given in doses of $\frac{1}{12}$ to $\frac{1}{2}$ and sometimes to 1 grain; it causes considerable pain. The gold and sodium chloride is given in gradually increasing doses of $\frac{1}{30}$ to $\frac{1}{5}$ or $\frac{1}{3}$ of a grain daily, and then diminishing to $\frac{1}{10}$ of a grain daily. It is painless. It is often good to alternate these, using iodine one day and gold the next. If albuminuria occurs, the iodine must be suspended and the gold alone used. The continuance of large doses of the gold and sodium salt may produce a yellow colouration of the skin. During the administration of iodine the patient usually loses weight, and catarrh of the bladder or intestines may be set up. The temperature also usually increases for a week or ten days, and there may be excessive sweating. The expectoration soon becomes lessened and then watery. Asthmatic symptoms and anorexia may supervene, with heavily coated tongue, dry throat, and diarrhœa, but these symptoms are rare. The majority of patients do best on small doses. After two or three weeks, the iodine and gold and sodium chloride should be used alternately every day or every other day; finally once or twice a week. Iodine cannot be used alone for any great length of time, but the gold and sodium salt can. In all the twenty-seven cases reported there seems to have been improvement.

Intra-pulmonary injections have not made much progress. One fatal case from pneumothorax has been recorded by French[32]. Fifty injections of **Beechwood Creasote in Almond Oil** had given good results, and the disease appeared to be in abeyance when the fatal result occurred.

This case, taken in conjunction with one previously published in which death occurred from acute suppurative bronchitis, shows that the risk of the procedure is considerable, and can only be justified by the expectation of benefits more decided than have yet been observed by even the most enthusiastic adherents of the method, one of whom, Dr. John Blake White[33], gives his further experience. "In view of the results obtained in the reported cases, together with other favourable experiences with the **Intrapulmonary Injections**, I have been, these past years, induced to continue them in all cases demanding this treatment. I have been so gratified with the intrapulmonary use of my composition that I have latterly adopted the subcutaneous insertion of the same fluid, graduated in quantity, to suit each patient's age and susceptibility to the hypodermic medication. Improvement invariably follows these injections; the cough, expectoration, and

night-sweats are controlled, and the patient describes a pleasant glow pervading the system, while a sense of greater strength continues for a day or more.

"I usually begin with 10 minims, gradually increasing the dose to 60 every day."

The formula was published in the "Medical Record," May 22, 1886; but it is now prepared with some slight modification, as care is necessary to avoid a precipitation of the alkaloids—the only difference being in the substitution of distilled water for diluted alcohol. The fluid is a clear, reddish-brown liquid, of a not unpleasant odour, and entirely non-irritating either under the skin or when injected into pulmonary cavities. For this method of treatment I have in some instances substituted the subcutaneous injection of the chloride of gold and sodium and iodide of manganese, guarded with a small amount of morphia or codeia and atropia—these last being added for their well-known effect in allaying irritation and controlling the night-sweats. The **Cyanide** or the **Iodide of Gold** is especially indicated in cases with laryngeal complication, relieving spasm of the larynx and allaying irritable cough largely occasioned by the throat ulceration. The results from the hypodermic use of these remedial agents have been such as to warrant further careful tests of their merit. It is not my intention or desire to excite undue expectations from these remedies, but simply to detail the results of experience, and to request my colleagues to look into their claims for recognition as potent agents in the debilitating conditions associated with phthisis, scrofula, syphilis, etc.

Professor Tillmanns[34] gives his experience of the treatment of pulmonary phthisis by intrapulmonary injections of **Iodoform, Glycerin,** and **Iodoform Oil.** He uses 10 per cent. sterilized mixtures of iodoform, glycerin, or iodoform oil, which he injects into the lungs to the amount of 5 grammes, with antiseptic precautions, through an incision in one of the intercostal spaces. He has not found it advantageous to inject more than 5 grammes. At first he made the injections under chloroform narcosis; now he makes them without an anæsthetic. Beyond ordinary dyspnœa, which quickly passes away, he has seen no injurious effects. He always makes the injection into one lung only, never into both at the same time, and usually performs the injections at intervals of from one to two weeks; in slighter cases he makes them every three or four weeks. With regard to the real advantages of these injections of iodoform into the lung, he cannot as yet make any positive statement. What he has seen up to the present, however, encourages him at all events to continue the treatment of

pulmonary tuberculosis by injections of iodoform into the lung. (See also "Lung, Surgery of.")

REFERENCES. — [1] "Practitioner," April, 1891; "Berlin klin. Woch.," November. 2, 1891; [2] "Brit. Med. Jour.," February 7, 1891; "Centralblatt für Bakteriologie," Nos. 2 and 2, 1891; [3] "Practitioner," Feb., 1891; [4] "Sajous' Annual," vol. i., 1890; [5] "New York Med. Jour.," Sept. 20, 1890; [6] "Brit. Med. Jour.," April 11, 1891; [7] "Practitioner," June, 1891; [8] "Therap. Gaz.," Dec. 15, 1890; [9] "Brit. Med. Jour.," Aug. 22, 1891; [10] "Semaine Médicale," March 14, 1891; [11] "New York Med. Rec.," Sept. 5, 1891; [12] "La Tribune Médicale," April 16, 1891; "Therap. Gaz.," June 15, 1891; [13] "Berliner klin. Woch.," No. 20, May 18, 1891; "Brit. Med. Jour.," July 18, 1891; [14] "Gaz. Médicale de Paris," Feb. 28, 1891; [15] "Lancet," March 15, 1890; [16] "New York Med. Jour.," July 25, 1891; "Pract.," Sept., 1891; [17] "Brit. Med. Jour.," Oct. 17, 1891; [18] "Berliner klin. Woch.," Sept. 21, 1891; [19] "Therap. Gaz.," June 15, 1891; "Zeit. für Therapie.," April 1, 1891; [20] "Brit. Med. Jour.," Jan. 20, 1891; [21] "Lond. Med. Rec.," Feb. 20, 1891; [22] "Brit. Med. Jour.," Feb. 14, 1891; [23] Supplement "Brit. Med. Jour.," July 4, 1891; "Riforma Medical," May 22, 1891; [24] "Brit. Med. Jour.," March 28, 1891; [25] "Therap. Gaz.," Oct. 15, 1890; [26] "Therap. Gaz.," March 16, 1891; "Gaz. Méd. de Paris," Jan. 24, 1891; [27] "Lancet," March 7, 1891; [28] Supplement "Brit. Med. Jour.," Aug. 22, 1891; "Gaz. Med. Lombarda," July 4, 1891; [29] "Practitioner," June, 1891; "Therap. Monat.," No. 3, 1891; [30] Supplement "Brit. Med. Jour.," May 9, Aug. 1, 1891; [31] Supplement "Brit. Med. Jour.," May 16, 1891; "Therap. Gaz.," April, 1891; [32] "Lond. Med. Rec.," Dec. 20, 1890; [33] "Med. Rec.," Dec. 27, 1890; [34] "Therap. Gaz.," Sept. 15, 1890.

Synopsis.—(Vol. 1891, p. 376.) **Creasote Capsules** containing gr. 1, of which 3 are taken the first day, increasing 1 capsule per day until the eighteenth day, continuing this dose—gr. 20 to 25 daily for some months. For administration by mouth or rectum of **Cod Liver Oil**, 40 parts, **Mucilage of Acacia**, 60 parts, and **Creasote**, ♏2, to each drachm of emulsion, increasing the dose. ℞ Guaiacol ʒj; Tinc. Gent. Co. ʒvij, M. Sig. gtt. 10 in water three times a day after meals, increasing dose up to ♏7½ of **Guaiacol** thrice daily. **Guaiacol** combined with **Iodoform, Maltine** and **Cod Liver Oil** is useful. **Balsam of Peru** in phthisis with laryngeal lesions, 5 to 1 gramme injected into veins in solution with **Almond Oil, Gum Arabic Mucilage** and **Chlorate of Sodium**, 1 in 400. **Aristol**, gr. 4, in **Cod Liver Oil**; **Iodoform** in tubercular ulceration of skin; **Salol** has proved useful in intestinal tuberculosis, but apt to irritate kidneys; **Camphoric Acid**, average dose gr. 30 for night sweats of phthisis; **Menthol** dissolved in 12% **Olive Oil** with pure **Creasote**, 2% added, injected in larynx in laryngeal phthisis.

Chloralamide as hypnotic, gr. 30 to 45 (p. 21).

PHYSICAL METHODS OF TREATMENT. *Percy Wilde, M.D.*

While simple physical methods are frequently employed in surgical affections, we are less accustomed to their use in conditions which come more particularly under the physician's care, although they find here an important sphere of action on grounds which will recommend themselves to the common-sense of both physician and patient when once attention is directed to the matter.

The new treatment of **Locomotor Ataxia** by extension of the spine illustrates the profound effect upon the nervous system which can be produced by a simple mechanical act. We have seen the very remarkable improvement in the walking power of ataxic patients after a course of "suspensions," and we have heard also of the discomforts and the dangers which attend the process. Just as the primary idea of those who wished to reduce a hernia was to place the patient with the head downwards, so the first thought of those who saw the good results which followed extension of the spine, was to hang the patient up in such a manner as would produce the greatest possible stretching of the vertebral column with the avoidance of strangulation.

From a mechano-therapeutic standpoint this method is crude, because it causes unnecessary discomfort and alarm to the patient, and because it does not admit of graduation. In the scientific employment of physical methods of treatment we attach the greatest importance to the power of graduating the force which may be brought to bear upon the patient. For this reason all mechanical means of producing such force are, as a rule, avoided.

In "suspension" the force is the equivalent of the weight of the patient's body, so that the degree of extension depends upon a factor which has no direct connection with the disease, and which is also only alterable by *duration* and not by intensity.

The method of extending the spine which we employ is shown in the following sketches :—

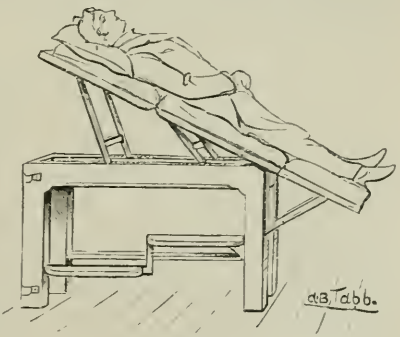


Fig. 15

The ordinary mechano-therapeutic couch is employed, and it is first arranged in the form of an inclined plain, the patient's head being at the highest point (*Fig.* 15). The part of the couch upon which the

upper part of the body rests is then *gently* lowered until the position shown in *Fig.* 16 is obtained.

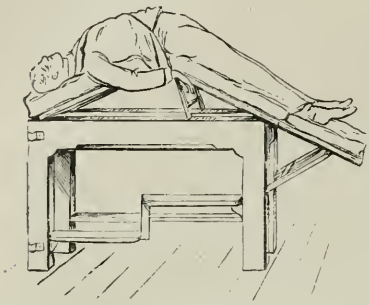


Fig. 16.

The degree of extension is graduated by the height of that part of the couch which is beneath the pelvis. In this position the lower limbs and the body act by their own weight as extending forces, their effect being chiefly felt upon the lumbar and lower dorsal regions of the spine, instead of upon the neck as in the operation of suspension. Further extension upon the whole spinal column is given by traction by the operator on the head of the patient, while counter-traction is given to the limbs either by the hands of an assistant or by the use of a weight attached to the limbs.

When the patient has remained in this position for one or two minutes, the upper part of the couch is raised so that the position shown in *Fig.* 17 is obtained.

Then the weight of the limbs acts as the extending force, and this may be aided, when necessary, by weights attached to the feet.

The patient remains in this position for eight to fifteen minutes, during which time suitable exercises for the arms or limbs may be given, and more forcible extension of the spine produced by lowering the patient to the second position at intervals

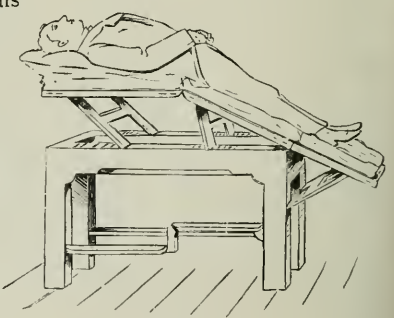


Fig. 17.

The three positions shown have a manifest effect upon the circulation, and although the rationale of the therapeutic results which have followed "extension of the spine" in locomotor ataxia cannot be regarded as precisely determined, we can hardly fail to look for them in the changes which are produced in the circulation of the disordered nervous centres. The methods I have described produce an increase and diminution in the blood supply by a series of alternations with the minimun of discomfort to the patient.

A recent patient who had greatly improved in his walking powers after over one hundred suspensions under the direction of Prof. Charcöt, was in a position to compare the two methods. While the physiological effects produced upon him were identical, he gave the preference to the one I employ, because of its greater effect upon the abdominal organs, and the absence of any discomfort during the process.

Intestinal inertia is common in such cases, and my own observations lead me to think that in suspension the extension of the vertebral column does not sufficiently affect the lumbar and lower dorsal nerves which are the most frequently affected.

I may mention incidentally that the position shown in *Fig.* 17 is the one I use in the treatment of **Sciatica.** Traction on the painful part of the limb is employed at intervals during the time the patient remains in this position. The relief to pain is often instantaneous, and affords conclusive evidence of the therapeutic power which the mechanical interference with the circulation of the nerve possesses.

Spinal Irritation.

Allied to the effects produced by extension of the spine in locomotor ataxia is that produced by percussing over the sensitive parts of the vertebral column, in those who suffer from what is generally called "Spinal Irritation." A few sharp taps given over the spine, such as might be used for purposes of diagnosis, will not cause any great degree of pain at the time, but a little while afterwards a feeling of languor and exhaustion will come on, which may last for twenty-four to thirty-six hours. There is, in fact, as a result of such a slight physical interference, an aggravation of the whole of the neurasthenic symptoms from which the patient suffers.

This exhaustion is obviously the result of over-stimulation of the sensory ganglia, for it is similarly produced by the jolting of a carriage or other cause which serves to over-stimulate these centres. We may take it as a general rule that imperfect nutrition is the physiological cause of the irritable nerve centre, and it occurred to me that the same cause which produced over-stimulation, might be employed to gently stimulate them, and so by improving their nutrition remove the irritability. I have, therefore, for some time employed percussion on either side of the sensory points of the spine, beginning with the gentlest blows, and daily increasing them in force and duration until the patient could bear a powerful Scottish douche upon the spine and enjoy it. Most patients will complain of feeling worse during the first week of such treatment, and the condition of their being

benefited at all depends upon the care and skill with which the manipulation is performed. The weight of the hand must have no share in the force of the blow which is struck, otherwise the effect is that of concussion, which is prejudicial in such cases. The movement should be made from the wrist, not the elbow, and the blow should be struck in such a way as to leave the fingers in contact with the skin for the shortest possible time. The part which strikes the skin is the inner surface of the fingers, which are separated and slightly flexed. This will be best understood by reference to the illustration (*Fig.* 18), which also shows the proper position for the patient and the operator. This is usually followed by a firm downward stroking movement on either side of the spine, given with the back of the fingers and knuckle, until the skin is reddened (*Fig.* 19), the return movement being effected by a light upward stroke, with the dorsal surface of the finger, as shown in *Fig.* 20.

Fig. 18.

For clinical purposes I divide functional disorders associated with tenderness over certain points in the spinal column into three classes:—

Fig. 19.

(1,) Those in which pain is directly referred to the spine, and which is frequently associated with general neurasthenic conditions.

(2,) Those in which pain is complained of in other parts of the body, the patient being unconscious of the existence of tenderness at any part of the spine; but which is found to exist and correspond with the central origin of the nerves peripherally affected.

(3,) Those who complain of aching in the back only after walking or exertion; and who are found to have a tender point or points, chiefly in the lumbar and lower dorsal regions of the spine.

In the first and second of these classes absolute rest in the horizontal position for a few weeks is essential—percussion being valuable to render the cure more rapid and permanent. The Weir-Mitchell method should be adopted in many cases, but instead of "massage" I prefer to have the body sponged with cold water, in small portions at a time, and vigorous friction used until the skin is red, each part as it is treated being covered with warm blankets. Whether massage or friction is employed, the nurse should not be allowed to touch the spine or shake the patient's body during the manipulation. In the third class, there is generally considerable weakness of the deep muscles of the back, and exercises designed to strengthen these muscles should be given as well as percussion. Usually a short walk may be allowed each day, rest in a reclining chair being insisted upon at other times, especially in the earlier stage of treatment These patients are usually young women between the ages of fifteen and twenty, and the condition is usually curable in from three to four weeks. They are greatly benefited by the use of cold water poured down the spine, followed by friction with a warm towel.

Fig. 20.

Stiff Joints.

The extension of a joint which has been stiffened as the result of any inflammatory process is a work which the practitioner is commonly called upon to perform, and it is one in which skill may be employed with advantage. The result of all inflammatory affections of the joints is to produce flexion in the limb, the flexor muscles being stronger than the extensors. When we come to treat such a condition we have not merely to deal with a stiff-joint, but with a great increase in the disproportionate strength of the opposing muscles. A single forcible straightening of the limb will usually result in a return to the flexed position, unless the limb is enclosed in splints, and then the pain caused by the splints is often intolerable, so that they have to be removed. In cases where the efforts at straightening the limb are not performed in a single operation but by a series of manipulations, the operator usually grasps the extremity of the limb and uses forcible efforts to extend the joint. This method is the one best calculated to set up vigorous contraction of the flexor muscles, and the operation becomes a struggle between the force of these muscles and that which the operator is capable of exercising. If the operator succeeds, he does so by exhausting the flexor muscles, which suddenly relaxing, causes the full force of the operator to come upon the joint, which is usually greater than he wished to employ, and the results are neither pleasant to him nor the patient.

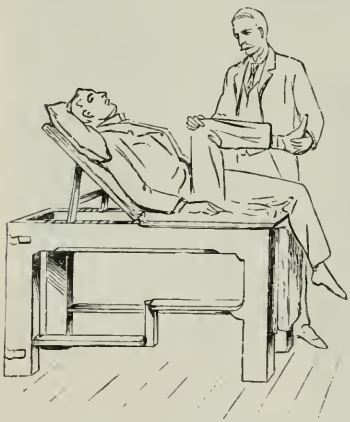


Fig. 21.

A better way is to direct the patient to make an effort to extend the joint, and for the operator to resist this effort by gentle pressure with his hands upon the extremity of the limb. If the patient will make vigorous efforts to extend the joint to its fullest possible limits, even if pain is caused, the operator may be satisfied with a very slight increase in the range of movement of the joint, because the exercise has strengthened the extensor muscles, and by its steady repetition both the joint and the muscle will be restored to their full power. If the patient will not extend the joint to its full limits because of the pain occasioned, the operator should resist the movement until the point is

reached where the patient usually stops, and then suddenly change his pressure of resistance into a pressure of assistance. If this is done skilfully, the patient is hardly cognisant of the change, and little or no pain need be caused. This method is particularly valuable in rheumatic arthritis. Joints which I formerly considered irretrievably damaged are now cured, if not rapidly, still satisfactorily; for the time taken to straighten and restore mobility to the joint is not longer than that which is necessary to restore the wasted extensor muscles, without which restoration the joint would be of no greater service than before.

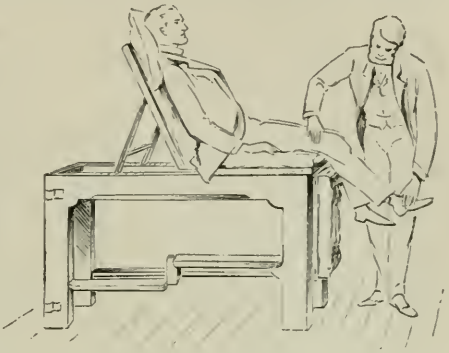


Fig. 22.

Figs. 21 and 22 represent the methods used for stiff knee joint, with loss of power in the extensor muscles of the hip and leg.

Incipient Phthisis Pneumonalis.

Much of our literature during recent years has been devoted to the endeavour to provide a satisfactory answer to the following questions: First, *What is the best method of rendering the tissues capable of resisting the attack of the tubercle bacillus?;* secondly, *How can it be destroyed when it has once infected any part of the organism?* The recent experiments made by Dr. Lauder Brunton in reference to the first question, as to the possibility of rendering the tissues impervious by the long-continued administration of lime, and other salts, tend rather to show that a contrary effect is exercised. The numerous investigations bearing on the second question, both with antiseptics, tuberculin, and cantharidinate of potash, etc., have tended to the general conclusion that the blood serum must be regarded as one of the most powerful agents for the destruction of tubercle, and, as a consequence, we have still more recently had records of treatment by the injection of the blood serum of the dog as a means of arresting the tubercular process.

Beside these facts we should place our common knowledge that tubercle is most frequently first deposited in the apices of the lungs, and that this portion of the lung is the least likely to be expanded in

tranquil respiration, and as a fact in phthisical subjects the expansion is notably deficient. We know that the first effect of the disuse of any organ or tissue is defective blood supply, and that this condition is most favourable to retrograde metamorphosis of any kind.

There is a pre-tubercular stage which we sometimes meet with in practice, in which the physical signs presented by the lungs are chiefly negative. Instead of the normal respiratory murmur, the breath sounds are of the shallowest description, and the expansile movements of the chest wall are of the same character. Such cases are associated with great debility, but no rise of temperature. If left untreated, they generally end in rapid tuberculosis. Another class of case more commonly met with, is the after result of pneumonia, where the lung has never regained its power, and presently breaks down, and all the physical signs of phthisis make their appearance. In such cases, as well as those in which tubercle is found to be deposited at the apices of the lungs, the patient's life depends upon the physician recognizing the importance of restoring physical activity to the disused tissues. By doing so he can at once furnish them with those agents which are most destructive to the tubercle bacillus and to retrograde metamorphosis, viz., oxygen and blood serum. The constant and natural supply of such agents must prove more effective than the occasional injection of "dog's serum" or some antiseptic.

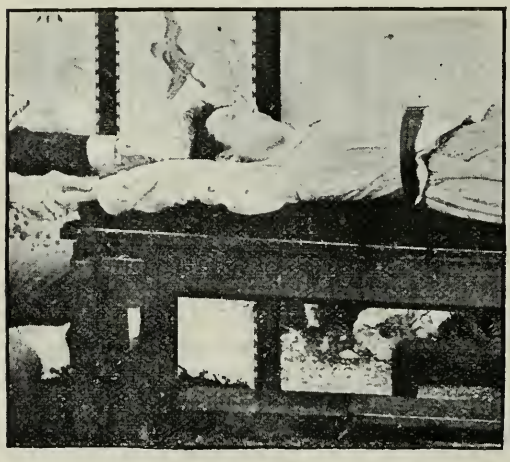


Fig. 23.

As regards the method of accomplishing this, it is worse than useless to tell the patient to go home and exercise the arms or use "dumb-bells."

To obtain expansile movements in inactive lung tissue requires all the care and skill which would be given to a surgical operation. The first exercises should be always performed by the

physician, and only when the patient has overcome the difficulty of expanding the chest, should the process be conducted by a trained nurse or attendant, whose manipulations require to be carefully watched.

The patient lies in the dorsal position on a perfectly flat couch or bed. He is directed to draw a deep inspiration, hold the breath for a few seconds, and then make a forcible expiration.

Next he or she is taught to raise the arms and extend them behind the head during the *inspiration*, and then hold the breath while the arms are flexed upon the body and brought to the sides, when the *expiration* is made.

Fig. 24.

The physician sees that during this movement the elbows are maintained in contact with the couch, otherwise its effect would be limited.

Next the physician grasps the extended hands of the patient, and offers steady resistance during the flexion of the arms. This is done six or eight times, the patient being allowed to take a few tranquil respirations between each movement. The position of patient and operator is shown in *Figs.* 23 and 24.

When the patient is able to bear it the same exercise is performed, but in an altered position, which renders it more powerful.

This is shown in *Fig.* 25. During the descent of the arms the operator not only resists and draws the hands backwards, but by pushing with his knee against the back of the chest, he forces it forward. Such exercises are capable of producing very profound physiological effects, and should be used with discretion. The number of movements

should not exceed ten, and a few tranquil respirations should be allowed between each.

Fig. 25.

Space will not allow me to explain other methods designed to force into action particular parts of the lung, but these are fully dealt with in my Lectures on the subject ("Baths and Physical Methods of Treatment").

Such exercises must be used in combination with methods for improving the *quality* of the blood. I use uncooked beef juice very freely during the course of treatment, and the results have been so satisfactory that I have not been tempted to try the numerous methods recently advanced.

The Physical Infirmities of the Aged.

The proposition that a person between seventy-five and eighty-five years of age should undertake a systematic course of physical exercises may be regarded as incongruous. We are so accustomed to associate age with decrepitude that it has come to be regarded as a matter of course. Yet we are all acquainted with persons of very advanced age who are capable of a very great degree of physical activity.

If we inquire into the history of elderly patients who are unable to walk or even rise from a chair without assistance, we shall discover how slight were the causes which have led to disablement. An attack of rheumatism or a prolonged illness which has prevented the use of the muscles for a time, ends in permanent loss of power because no effort is made to restore them. Some even drift into such condition from habits which would be called indolent in a younger person. It is surprising how soon the disuse of muscle is followed by the lack of power to co-ordinate them, and how false methods of performing any complex muscular movement, such as "rising from a chair," take the place of natural and proper methods. Added to this we have the purely psychical condition dominated by the "fear of falling" to contend with. The psychical factor in these cases is much greater than would

be supposed, and no amount of massage or passive exercise would increase the walking powers of the great majority of persons who have been crippled for a prolonged period unless the mental condition was treated at the same time.

In the treatment of such cases I rarely use "massage" or passive exercises. For purposes of diagnosis each muscle or group of muscles is tested by asking the patient to perform a movement bringing it into action, the other muscles being thrown out of action by the patient reclining on a couch. The physician gently resists each movement, and by strengthening or relaxing his resistance, obtains an exact idea of the relative strength of the various muscles.

The *first stage* of treatment consists in exercising the weaker muscles until their power is equal to that of their antagonist muscles. In doing this care must be taken not to exhaust them by offering too great a resistance, or by over-exercise. Eight to twelve movements of any particular muscle or group is generally sufficient.

The *second stage* is to give those exercises which require co-ordination between separate groups of muscles. Such exercises have a direct effect upon the central nervous system which is always affected where there has been prolonged disuse of a limb. If we ask a long-bed-ridden patient to move the limb a few inches in any direction, we shall observe as the effort is made that the limb shakes and trembles ; and although every muscle is contracted, there is failure to accomplish the movement. This is not from the want of nerve or muscular force, but the absence of the power to direct the proper muscles to contract. It is surprising how rapidly we can re-educate the nervous centres if the proper steps are taken.

The *third stage* is to instruct the patient in those complex movements, such as rising from a chair and walking. Here false habits have to be overcome. A patient in the habit of rising from a chair with assistance will advance the legs, and in this position pull the body upwards by the use of the arms, or trust to its being pulled up by the attendant. It is impossible for a strong man to rise from a chair without assistance or the use of the arms, when in this position.

I never allow a patient to use the arms in rising from a chair. The feet must be drawn well under the chair, and the operator standing in front places his hands above the patient's elbows, draws her *directly* forwards. The patient finds the centre of gravity on rising about two inches from the seat, and then only has to straighten herself. The diminution in the effort required is immediately appreciable, and usually this particular difficulty is surmounted in a single lesson. "The fear of falling" is the great obstacle against which patients have

to contend both in this movement and in walking, and the way of overcoming this will readily suggest itself to the reader.

An American gentleman who had an attack of paralysis affecting both lower limbs, after treatment by eminent neurologists in the United States, came to Europe, where he had further treatment under skilful advisers. As he could not regain his walking powers he was finally advised to come to Bath for mineral water treatment, and placed under my charge. He could just manage to shamble across a room when supported by attendants on either side. I examined the various muscles and group of muscles according to the method I have described, and found a fair amount of power in each. I tested the co-ordinating power, and found that it was fairly good. I came to the conclusion that all the effects of the paralysis had been really cured by the physicians who had preceded me, but their results were not apparent because the psychical factor had been left untouched. It was not the lack of power to walk, but the fear of falling which was the dominant factor.

I took the patient off the couch and stood him on the ground, and directed him to fix the elbows to the side, while I supported him by grasping them from behind. I then pushed him gently forwards, making him walk in his own way, and then gradually quickened my pace in spite of many exclamations of fear on his part, and when I finally broke into a smart double, he found all his energies occupied in maintaining his balance. I finally left him standing in the middle of the room and told him to find his own way to a chair. He did so without difficulty, and finally walked back to his hotel. A cure of this kind is calculated to add greatly to a practitioner's reputation from the popular side, although it involves no skill except that of being able to distinguish between the three factors in the cause of lameness which I have mentioned, viz., the muscular, the central, and psychical, and this can be accomplished by the purely physical methods I have described.

Another frequent cause of loss of power in the lower limbs in aged people is intestinal inertia. The lower bowel being constantly loaded by fæces and distended with gas, presses upon lumbar nerves, and a condition allied to paresis is produced. A lady, eighty-two years of age, now under treatment, was sent to me suffering from "paralysis of the lower limbs," this opinion being confirmed by a London consultant. Fourteen days after commencing treatment the patient walked to my house. Here manipulation of the abdomen and exercises designed to bring the abdominal walls into greater activity were almost more important than the exercise of the lower limbs.

My object in this paper is merely to suggest the usefulness of a knowledge of physical methods of treatment rather than to describe their technique, which would occupy greater space than could be afforded here.

It is precisely in those cases where medicinal methods are useless, that their application is most valuable.

PILES. (See "Hæmorrhoids.")

PLEURISY. *F. de Havilland Hall, M.D.*

It was only natural that the attention which of late years has been directed to the importance of bacteria in the production of disease should have led to a careful bacteriological examination of the fluids met with in pleural effusion. This has been done, and the results seem to show that both from a prognostic and also from a therapeutic point of view the routine examination of these fluids will give valuable assistance to the physician.

E. Levy[1] has made investigations in fifty-four cases of pleuritic effusion. Plate and tube cultures were made, in addition to the ordinary microscopic examinations. Of these fifty-four cases, thirty-seven were serous and seventeen purulent. Levy draws the following conclusions: (1,) The great majority of sero-fibrinous pleuritic effusions contain no micro-organisms; (2,) The absence of micro-organisms, when the effusion is purulent, points to the probability of the case being a tubercular one; (3,) The presence of the staphylococcus pyogenes in serous effusions in no way indicates that it will become purulent; (4,) The discovery of Fräenkel's pneumococcus in serous effusions in cases of pneumonia, after the crisis has passed, does not make the prognosis more grave, as it does not increase the probability of an empyema.

According to Professor Kiener[2], of Montpellier, the fibrino-purulent effusions are produced by the pneumococcus, the streptococcus pyogenes, or the tubercle bacillus. The wholly purulent effusions are set up by the staphylococcus aureus or albus, either alone or associated with other forms of micro-organisms, and especially with the tubercle bacillus. Hs shows that the fibrogenous process of inflammation may be independent of the action of any micro-organisms, but that the subsequent changes which the effused fibrinous material is to undergo are largely influenced by their presence.

At page 393 of the "Annual" for 1891 attention was directed to Dr. Barrs' observation "that empyema and simple pleuritic effusion have very little in common, either in their clinical march, their pathology, or their ultimate event." This opinion is confirmed by the

results of the careful enquiries that Dr. Drummond has made into the earlier history of all cases of empyema that have come under his notice. These were undertaken owing to his dissatisfaction with the theory that empyema results as a rule from simple pleurisy. The view that Dr. Drummond[3] advocates is that in some way croupous pneumonia is associated with the pus formation ; that, indeed, the ordinary empyema, generally supposed to result from a serous or sero-fibrinous pleural effusion (simple pleurisy), is, in the great majority of instances, a consequence of pleuro-pneumonia.

The importance of recognizing the pneumonic origin of empyema cannot well be overstated. The transition from acute pleuro-pneumonia to empyema is often so gradual that the practitioner may be pardoned, as time advances, for regarding the case as one of lingering consolidation, and the patient may die with his pleural cavity nearly filled with pus. Again, the early discovery of pus has in some cases so far simplified the treatment as to do away with the necessity of incising and draining. Dr. Drummond is sanguine enough to believe that before long it will be the rule, and not the exception, to cure empyema by a single tapping, provided the condition be recognized at the outset.

M. Fernet[4], in bringing before the *Société de Thérapeutique* a case of empyema following upon typhoid fever, raised three questions regarding the treatment of pleuritic effusions :—

(1,) Is thoracotomy necessary ?

(2,) Is washing out the pleural cavity after incision useful ?

(3,) Is it advantageous to dress the wound infrequently ?

(1,) For several years past M. Fernet has taught that in some circumstances simple puncture followed by antiseptic injections is indicated in the treatment of certain infectious and purulent pleuritic effusions. Where the purulent effusion is caused by streptococci, or is complicated by a bronchial fistula, pleurotomy is necessary.

(2,) In considering the question of washing out the pleural cavity it is important to bear in mind that purulent pleurisy does not constitute a nosological unity ; on the contrary, there are several kinds of purulent pleurisy. M. Fernet insists upon the necessity of distinguishing empyemata, according as they are caused by the pneumococcus, by the streptococcus, by the bacillus tuberculosis, by saprogenous micro-organisms, etc. Thus, for example, the purulent pleurisies due to the pneumococcus are comparatively benign, and, therefore, washing out may be omitted in these cases. On the other hand, the pleurisies of streptococcic origin are often very grave and very dangerous, and hence the need for thorough disinfection of the

pleural cavity, which should be carried out with all antiseptic precautions. As regards the repetition of the washing out, M. Fernet only advises it when there are signs of decomposition in the cavity.

(3,) The subsequent dressings should be as infrequent as may be, and they should only be renewed when the symptoms, local or general, indicate that the antisepsis is insufficient. The insoluble antiseptics are the best, as they have a more permanent action than the soluble ones.

Professor König[5], of Göttingen, places on record the results obtained by him in the treatment of seventy-six cases of purulent pleuritic effusion during the last twelve years. Details are given of the steps of the usual operation adopted. The opening was generally made at the level of the fifth or sixth rib, and about the area of the anterior axillary line. Resection of a portion of rib is advised in most cases. If evacuation by simple opening is not complete it may be advisable to wash all thick shreds away with a stream of warm water, but antiseptic fluids are not necessary, nor is any further irrigation as a rule required if a good opening is maintained. The injection of carbolic acid solutions is condemned as unnecessary and harmful. A double incision is not required. The bandages should be made to include the arm on the affected side, and the patient should be encouraged to lie on that side, and for the first few days his body should be tilted three or four times a day, either by himself or by an attendant, so that the opening in the chest wall becomes the most dependent part. This is to ensure drainage from all parts of the pleural cavity in turn, but does not necessitate a change of the dressing after each change of position. The temperature must be taken as the guide to indicate whether the pus is being freely drained, and on any rise the wound should be dressed, and any obstruction to the flow of fluid removed.

Dr. T. J. Walker[6] claims that he invented the method of siphon drainage of the chest known as Bülan's method (see "Medical Annual" for 1891, p. 396) about twenty-five years ago, and has practised it from that time.

Bülau[7] is of opinion that siphonage has got into disrepute with certain authorities, not because of its own defects, but because it has not been properly applied. He maintains that if the same result can be got by simple means, such as siphonage, the more serious measure of resection of ribs cannot be justified until other means have failed.

Dr. A. Fräenkel[8] brought before the Verein für Innere Medicin a case illustrating the rapid and successful healing of a tuberculous empyema by siphon drainage.

Dr. Lewaschew[9] advocates a method of procedure which he has practised with singular success both in serous and in purulent effusions, in cases where adhesions have not taken place. This method was first tried upon the lower animals, and perfection in its application arrived at by that means. It consists in withdrawing a small quantity of the fluid until some uneasiness is felt by the patient, and then injecting, by a reversed action of the aspirator or siphon, an almost equal amount of a carefully-sterilized solution of sodium chloride, of a strength of 0·7 per cent., in distilled water. This degree of strength was determined by careful experimentation, and a caution is given against the use of stronger saline solutions. The 0·7 per cent. solution does not materially affect the inflammatory processes, any little reaction observed being favourable rather than the reverse. Its action within the pleura is to restore the balance of pressure, and at the same time to dilute the rest of the fluid, which may be withdrawn and again diluted with the saline solution several times, until very little but the saline is left in the cavity. Absorption of this residue takes place quickly, but the patient's temperature often remains high during the process, even though improvement be taking place in other respects. Professor Lewaschew claims for this method that it does away with the effects of sudden changes of pressure within the pleura ; that it is painless ; that it stops further exudation, and aids rapid absorption ; that it has proved successful in all cases of simple effusion, and in most cases of purulent effusion, where the lung has not been bound down by adhesions ; and, finally, that success has been obtained in some very prolonged cases where no other treatment has been effective.

Reference was made in the "Medical Annual" last year (p. 396) to the treatment of double empyema. Since then other cases have been recorded.

Mr. Pearce Gould[10] is of opinion that in children double empyema is by no means so fatal an affection as has been assumed, and that if repeated aspiration failed the surgeon should not hesitate to drain freely each pleural cavity, provided that an interval of some days be allowed to lapse between the two operations.

M. Clément[11] has obtained excellent results from **Antipyrin** in cases of pleuritic effusion. Whether fever be present or not, he at once administers **Antipyrin**, without any other medication whatever. In all cases there was, on the following day or at latest the day after, a marked reduction in the height to which the dulness reached. In some cases the dulness disappeared after forty-eight hours' treatment, and in two or three the fluid was completely absorbed in twenty-four

hours. In no case was the effect delayed beyond four days. The dose given was, as a rule, 90 grains a day, 15 grains being given every four hours. After absorption of the fluid the treatment should be continued for some days longer, in order to prevent relapse, the daily dose being, however, reduced to 60 grains. The cases treated by M. Clément included examples of acute pleurisy *a frigore* and latent pleurisy; both forms yielded readily to treatment, the effect being rather more rapid in the latter than in the former. The treatment failed when the effusion was purulent or bloody. In cases in which the whole pleural cavity was filled with fluid, M. Clément did not feel himself justified in trying the antipyrin treatment, but performed thoracocentesis without delay. M. Clément thinks antipyrin has a specific action on nearly all inflammatory processes, and it is to this that he attributes its beneficial effect in pleural effusion.

Tetz[12] confirms the favourable opinion previously expressed by Aufrecht of the effect of **Salicylate of Sodium** in recent cases of pleural effusion. Tetz finds that the average time of treatment is much shorter than in any other method. Although it acts most promptly and certainly in recent cases, he has seen collections of fluid of several weeks' standing yield to it; and this not only in primary, but also in secondary pleurisies.

REFERENCES:—[1] "Lancet," vol. ii., 1890, p. 1172; [2] "Revue de Médicine," Nov., 1890; [3] "Brit. Med. Journal," July 18, 1891; [4] "Gazette Hebdom. des Sciences Med.," Nov. 23, 1890; [5] "Berlin. klin. Woch.," Nov. 10, 1891; [6] "Brit. Med. Jour.," vol. i., 1891, p. 1098; [7] Supplement "Brit. Med. Jour.," Dec. 13, 1890, p. 81; [8] "Deut. med. Woch.," No. 17, 1891; [9] Ibid., No. 52, 1890; [10] "Lancet," vol. i., 1890, p. 1330; [11] "Lyon Médical," May 10, 1891; [12] "Therap. Monat.," No. 7, 1890.

Synopsis.—(Vol. 1891, p. 394.) Partial compression of thorax for relief of pain by means of **Bandages**; **Early Tapping** in pleurisy with effusion; **Blisters**; **Iodine Preparations** and **Iodide of Potassium** internally; **Generous Diet**; Bülau's method of drainage; washing out pleural cavity is dangerous; free incision with simultaneous resection of ribs. Regular muscular exercise to expand chest should be employed early.

Tincture **Apocynum Cannabinum**, ♏10, as diuretic in pleurisy with effusion (p. 9.) **Naregamia Alata** Tincture, gtt. 16 to 50, daily as expectorant (p. 41).

PNEUMONIA.

F. de Havilland Hall, M.D.

Can Injury produce Lobar Pneumonia?—Dr. J. A. MacDougall[1] answers this question by giving the notes of five cases of different forms of traumatism affecting the lung, and he goes on to say, "that although in a certain proportion of cases the very acuteness of the signs and

symptoms attendant upon such lesions may simulate closely pneumonic fever, they have their origin in a mechanical interference with the pulmonary circulation, and that in their progress, and especially in the results they give when treated by free depletion, they differ very widely from croupous pneumonia." He quotes Sturges and Coupland's[2] view with approval. "The final conclusion in regard to the alleged traumatic origin of the disease seems to be this: lobar pneumonia does undoubtedly sometimes follow injury either immediately or with a short interval."

Dr. Isdell[3] records two cases of pneumonia occurring in children who had received falls on the pavement sufficiently severe to stop their play and make them go home and tell their parents. Within, at any rate, twelve hours they were seized with feverishness, etc. In both cases the pneumonia was well marked, but not severe.

Mr. Menzies[4] gives the particulars of a case which certainly seems to point strongly in favour of the traumatic origin of pneumonia.

Two remarkable cases are stated by Dr. F. W. Burton[5] to have been admitted into Addenbrook's Hospital, Cambridge, in which pneumonia followed in the course of a few hours upon a severe injury to the side. In the second case the diagnosis was verified by a post-mortem examination.

In a case reported by Dr. Heimann[6] the patient, who suffered from pneumonia following a fall on the side, claimed and obtained compensation from an accident fund in which he was insured.

Is Pneumonia infectious?—Dr. Sokoloff[8] would answer this question with a distinct affirmative. His observations are based upon two thousand three hundred and sixty cases of the disease. He regards croupous pneumonia as an infectious disease, which in hospitals is transmitted from patient to patient, much in the same way as erysipelas. Typhoid patients have a special tendency to catch the infection, and the mortality of those who suffer from the complication is enormous. He suggests that every hospital should keep special wards for pneumonic cases and that on the appearance of pneumonia in typhoid patients, they should be at once isolated, and the infected ward thoroughly disinfected. On the outbreak of an epidemic of croupous pneumonia, strict sanitary measures should be at once adopted throughout the town.

Dr. Oliver[9] records three cases of infective pneumonia occurring in one family, and he says that "whether as the result of the wave of influenza which recently passed over this country, or of some other condition hitherto unrecognized, we have had during the summer months in Newcastle and the immediate district a large number of cases of

pneumonia, many of which have been so virulent and atypical that it is just a question how far the pneumonia has not been simply an incident in the morbid state."

This opinion is in accord with the experience of medical practitioners in all parts of the kingdom. As examples we may cite the epidemic of pneumonia[10] which prevailed in the neighbourhood of Scotter, in Lincolnshire. The fatality was very great, eighteen out of twenty-nine dying. A number of those attacked had been in close relations with the sick, washing their linen or laying out their bodies, and one of the medical men in attendance caught the disease and died of it. Sheffield was visited with a very severe epidemic and Dr. Gwynne[11] directs attention to the unusual tendency towards complications which marked all the cases of pneumonia during this period. Amongst these he mentions parotiditis, phlebitis of femoral vein, pericarditis, pleurisy, and abscess. More recently Dr. Bruce Low[12] has been instructed to report on the occurrence of an alarming epidemic of pneumonia at Raunds, in Northamptonshire. It appears that during the months from December 1890 to March 1891, no less than one hundred and fifty-five children and infants had been attacked by "pneumonia," and one hundred and four adults and children had suffered from a less grave malady regarded as tonsillitis or sore-throat.

Dr. Leech[13] gives an account of a case of pneumonia which shows very well the occasional infective nature of this malady. A map accompanies the paper, and from it we learn that a number of persons in adjacent houses were all affected with pneumonia within a short time of each other. Dr. Leech's patient subsequently developed, four or five days after the crisis had occurred, symptoms due to peripheral neuritis.

TREATMENT.—Dr. Fenwick[14] comments on five hundred and two sthenic cases of pneumonia in the London Hospital, the treatment of which consisted in the administration of **Various Medicinal Substances**, while the local applications took the form of **Hot Fomentations** or **Poultices.** The total mortality was 23 per cent. Dr. Fenwick draws the following conclusions from an analysis of the cases under consideration: (1,) During an ordinary attack of acute pneumonia, death is most apt to supervene about the fifth day—at the height of the fever; (2,) After the eighth day, the danger to life increases enormously with each day that the crisis is deferred; (3,) The crisis itself is a period of very considerable danger. The amount of albumen detected in the urine in the first three days, although in the vast majority of cases only a trace, is, Dr. Fenwick believes, in itself a point of considerable prognostic

value, and one which has been much overlooked. He finds that the quantity of albumen present in the urine during the first three days of the disease bears a definite relation to the attendant mortality. Thus, of cases which presented one-fourth of albumen, 32 per cent. died ; of cases which presented one-third of albumen, 52 per cent. died ; of cases which presented one-half or more albumen, 86 per cent. died. Another point of interest may be found in connexion with the initial symptom of the disease. In about 65 per cent. of all the cases a distinct history of an initial rigor was obtained ; but in seventy-six cases the disease commenced with a severe gastro-intestinal attack. The rate of mortality among the former class was about 23 per cent. ; of the latter no fewer than thirty-six died—nearly one-half.

Digitalis was administered in forty-three cases, and of these nineteen died. This extreme degree of mortality would appear to condemn the remedy outright ; but it must be remembered that in these cases the heart was probably failing from the commencement, and it is well known that such cases are exceedingly prone to die, in spite of treatment. A preliminary venesection was practised in six cases, a fatal result supervening in five. Some form of alcohol was administered in 68 per cent. of all the cases.

Quinine.—This drug appears to have been administered with the view of exerting some special influence upon the exciting cause of the disease, and in fifty-two cases it constituted the entire medicinal treatment, in doses varying from twelve to forty grains daily. In thirty-two cases the average temperature varied between 103° and 104°, and of these, six, or 19 per cent., died. In twenty cases the average temperature varied between 104° and 105°, and of these, five, or 25 per cent., died. Stimulants were administered in thirty-nine cases ; nevertheless, two out of the eleven deaths occurred from collapse, when the fever suddenly defervesced at the crisis on the seventh day. From these facts it would appear that quinine, in the afore-mentioned doses, exerts but little beneficial influence in these cases ; and after very careful examination of the various temperature charts, Dr. Fenwick has been unable to satisfy himself that the exhibition of the drug had tended in any way to modify the degree of fever. When these results are compared with those in the previous section, several points of similarity become apparent. In both cases the total death rate exceeds 20 per cent. ; under both methods of treatment the mortality bears a constant relation to the severity of the symptomatic fever ; and both emphasize the same important fact—namely, that fatal failure of the heart at the crisis is of frequent occurrence, and results from the sudden withdrawal of the stimulating action of fever.

Antipyretic Treatment.—The reduction of temperature may be brought about by the agency of two distinct classes of remedies—either by the administration of the various so-called antipyretic drugs (of whose mode of action we are still in ignorance), or by the employment of some method which can affect the reduction of temperature by the direct abstraction of heat. As the number of cases in which such drugs as antipyrin and phenacetin were alone employed was too small to draw any practical conclusions, Dr. Fenwick confined his attention to the results which have attended the systematic efforts to control the symptom of fever by the direct abstraction of heat:—

(*a*,) *The Ice-bag.*—Among the series of cases there are only twenty-six in which the disease was treated solely upon this principle; for although a very large number of others received the ice-bag as a local application, the temperature was at the same time moderated by some accessory means. Of this number, eighteen exhibited an average temperature of from 103° to 104°, with two deaths. while in the remaining eight, the temperature of which exceeded 104°, two cases ended fatally. In no case did any bad symptom result from the use of the cold application. The value of the ice-bag (or Lieter's tubes) may therefore be summarized somewhat as follows: As a local application in some sthenic cases it proves itself of more practical value than the linseed poultice, the pleuritic pain being relieved, while at the same time the general condition of the patient undergoes improvement. Its manipulation is simple, and by its lesser weight it does not tend to hamper the movements of the chest like the jacket poultice. As a general antipyretic remedy its value is inconsiderable. The mortality attending its use is probably lower than that which results from the previously described methods of treatment.

(*b*,) *The Cold Pack.*—In twenty-six cases an attempt was made to control the temperature by repeated applications of the cold wet pack. When compared with the other antipyretic methods at our command it must be admitted that the wet pack is certainly of inferior value, for it is seldom that the actual reduction of temperature entailed by its use amounts to more than half a degree. It is, however, usually agreeable to the patient, and tends to soothe that form of mental irritability which is often so marked a feature of cases of acute pneumonia, so that patients, after a wet pack, will fall into a refreshing sleep, the first, perhaps, that he has had for some days.

(*c*,) *Sponging.*—It is the custom at the London Hospital to employ water at the temperature of about 116° F., this degree of warmth being not only more grateful to the patient, but actually more efficient in effecting a reduction of temperature. Sixty-five cases were treated

by systematic sponging over of the body with tepid water. Stimulants were administered in thirty-three cases; the majority also received medicinal treatment in the form of a mixture containing ammonia and ether. There were eight deaths. No death occurred at the crisis. Thus in sixty-five cases treated upon general principles, subserving the economy of cardiac force, and in which the average temperature exceeded 103°, the mortality attending the disease only amounted to 12·8 per cent., a reduction to the extent of almost one-half.

(*d*,) *The Ice-cradle.*—This is an arrangement by which a constant current of cool air can be brought into immediate contact with the surface of the body, and thus bring about a reduction in its temperature by direct abstraction of heat. It consists essentially of an iron surgical cradle, from the central bar of which are suspended several small zinc pails half filled with ice. The patient lies undressed upon the bed, and the cradle, covered by a light counterpane, is placed over him. In order to prevent any feeling of chilliness a hot water-bottle is kept in contact with the patient's feet. During the last eighteen months forty-three cases of acute sthenic pneumonia have been treated with the ice-cradle. In no case did death occur at the crisis, and the percentage mortality only amounted to 7. The internal remedies usually consisted of some preparation containing quinine and ammonia.

After the disastrous results which, according to Dr. Fenwick, attended the administration of **Digitalis** at the London Hospital, it is somewhat startling to find that Dr. Petresco[15] has obtained excellent results from this drug in croupous pneumonia. In infectious pneumonia he has usually combined it with antiseptic methods. He also states that he has obtained satisfactory results in cases of pneumonia complicated with bronchitis and pleurisy, and he claims in the most positive manner to have cut short undoubted cases of croupous pneumonia, so that within twenty-four to forty-eight hours—the time necessary for the effects of the digitalis to be demonstrated—he has succeeded in obtaining sudden and almost absolute reduction of the temperature to the normal, accompanied with reduction of the pulse, while at the same time this disappearance of fever is accompanied by general improvement in the patient's condition, pain and cough being diminished, the temperature becoming normal, while the healing process rapidly goes on to completion. The large doses, with the exception of but rare cases, are without effect on the digestive canal, although sometimes he has met with vomiting as the result of this method of treatment. The most evident symptom detectable as to the effect of this medication is the marked slowing in the pulse, with

increased tension. Dr. Petresco concludes his paper with the following deductions : (1,) Digitalis has an important antiphlogistic action only in its special therapeutic dose ; (2,) The specific therapeutic dose of digitalis amounts to from 75 to 150 grains of digitalis-leaves administered as an infusion in twenty-four hours ; (3,) This dose may be administered in from two to four days continuously, according to the severity of the case ; in some cases from 300 to 375 grains of digitalis-leaves being given in four or five days without symptoms of nausea, or, in fact, any toxic effect ; (4,) When a diminution in the rate of circulation and respiration takes place, disappearance of all the local symptoms of pneumonia can be noted ; (5,) The value of this method of treatment is proved by statistics, the mortality of cases of pneumonia so treated with high doses of digitalis being much less than that observable when any other method is employed ; (6,) The value and harmlessness of this therapeutic dose of digitalis is established by the author's numerous individual experiments and by the cases reported by his scholars ; (7,) After a comparison of the various methods of treating pneumonia Dr. Petresco affirms that the expectant method of treating pneumonia is not only irrational, but even dangerous ; that the assumption that there is a definite cycle of progress in pneumonia is not warranted ; that pneumonia may be cut short by an energetic rational mode of treatment, especially if the method is inaugurated at the onset of the disease, and that, finally, the claim is supported that the treatment of pneumonia with large doses of digitalis furnishes better results than that obtainable by any other mode of procedure.

Dr. Bosley[16] has used **Salol** (salicylate of phenol), generally given in combination with quinine, with good effect in pneumonia. He finds that it speedily reduces the temperature, and promotes resolution in an unprecedented manner. He gives it to adults in 10 grain doses.

Oxygen.—A remarkable case of pneumonia successfully treated by continuous **Inhalations of Oxygen** is reported by Dr. Blodgett[17].

Bleeding.—Prof. Quinan[18] adopts the view that pneumonia is a local inflammation, and not a general disease with a local manifestation in the lung. He claims that for the acute sthenic form of this disease, attended with profound congestion and speedy inflammation, **Blood-letting**, promptly and judiciously used in the first or second stages, offers the best and most efficient remedy. It sets in suddenly with a chill, after some undue exposure, and exhibits no prodromata, as do general or idiopathic fevers. It is often confined to one lung, and as frequently to one lobe of that lung ; and, further, one attack does not procure immunity from another, as we should expect were it a specific fever.

Dr. Quinan's plan is to institute one full bleeding as early as possible, following it up with tartar emetic in minute doses, together with calomel and opium, the application of poultices to the chest, and, in the later stages, blisters, with plenty of nourishment. In the later stages muriate of ammonia is administered, combined with tincture of opium and small doses of tartar emetic, the amount of the latter proportionate to the febrile movement. Dr. John Atlee, in his address before the American Medical Association, June 3, 1883, said: "I feel well assured that the almost total disuse of the lancet has cost many valuable lives. From a very large experience in its use I am satisfied—fully satisfied—that if we depended more on the early use of the lancet in the congestive and inflammatory states of many diseases, our practice would be more successful than it now is." Again, Dr. Richard McSherry writes: "In the face of an appalling opposition, I believe blood-letting to be the most potent, if not the safest of antiphlogistics."

Is Venesection advisable, in Diseases of the Lungs?—The result of the discussion at the Royal Medical and Chirurgical Society which followed upon a paper read by Dr. Pye-Smith[7] on January 27th, 1891, was emphatically to endorse the views of the reader of the paper. There can be no doubt that the reaction against the excessive amount of blood-letting practised during the first half of this century inclined the pendulum too far in the other direction, and that consequently a valuable means of treatment became neglected. As regards lung diseases Dr. Pye-Smith said that cyanosis with distention of the right side of the heart, whether from pulmonary or from some other obstruction to the circulation, was one of the indications for phlebotomy, and he mentioned cases of bronchitis, acute and chronic bronchopneumonia, lobar pneumonia, miliary tuberculosis of the lungs, and congestion of the lungs, from valvular disease of the lungs, in which he had employed it with advantage. Dr. Ogle in a paper, "Concerning Blood-letting," gave a striking example of the beneficial effect of bleeding in pneumonia. Dr. J. Christian Simpson has proposed an extension to another organ of the practice of hepatic phlebotomy as performed by Dr. Harley. He has punctured the lung in four cases with trocar and cannula, and though none of these cases recovered, he thinks the immediate results were such as to warrant hopes of this plan of treatment being more successful in the future. He says that the indications for this method are: (1,) Extreme pulmonary congestion and œdema; (2,) Absence of effusion into the pleural cavity; (3,) General venous stasis and cyanosis, all of which may occur in the progress of certain heart and kidney affections; and (4,) That other

treatment, medicinal and mechanical, had failed to relieve the symptoms.

The co-existence of such congestion without pleural affusion is somewhat rare, and therefore this limits the practice ; for the mere aspiration of the pleural effusion is almost invariably foilowed by such relief in cardiac cases that venesection is not required. It is therefore a necessary preliminary procedure to negative the presence of effusion in any quanity that would embarrass the heart's action and impede the pulmonary circulation. To do this thoroughly an exploring needle must be used. The condition of the lungs in a suitable case is such that, as regards the danger of subsequent pneumothorax, little or no air is being interchanged at the proposed seat of puncture, and the elasticity of the lung is quite sufficient to prevent any serious oozing taking place.

"The method of procedure may now be considered *seriatim* : (1,) What side is to be the seat of puncture ? As a rule, I think the right side should be chosen if both sides are equally free of effusion, or are generally engorged. The reason for this is evident when it is remembered that such cases usually lie on that side, and consequently the congestion will be greater, and the rest to the lung afterwards will also be greater than on the left side ; (2,) The site of puncture should be not higher than the ninth interspace posteriorly ; (3,) The needle to be used is the largest usually supplied with an aspirator, the parts used being the cannula and the corresponding trocar and fittings, but it will be found advantageous in some cases to use a probe of a size smaller than the cannula. I found the suction by means of the aspirator too powerful in any degree, but there was no convenience from its absence, as there was not the slightest tendency in any of the cases for air to be inspired through the cannula—so complete was the congestion ; (4,) Mode of puncture : This should be in one thrust, so that there be no danger of one or more small punctures of the lung. If this be not done the patient will cough and be troublesome, as the visceral layer of pleura is very sensitive, but with one thrust there is little or no discomfort. The depth of cannula introduced need not be great at first, and it could only be by great carelessness that any vessel of any size could be injured. The *tactus eruditus* will at once advise the operator of the fact that the end of the cannula is not in a free space containing fluid ; (5,) The cannula being steadied and the needle withdrawn, the operator should wait for a few seconds to see if any blood flows. If not, the cannula should be moved, so as to produce slight laceration, then slightly withdrawn, and usually there is a free flow. If clotting takes place, the smaller probe should be introduced

and the cannula cleared. The probe being smaller, allows of blood to flow, although it may be *in situ*, and keeps any lung tissue from the end of the cannula; (6,) The amount of blood to be abstracted varies according to the case and the results produced, it being as a rule less than would be required were venesection adopted; (7,) The extraction requires some care. The finger should be placed on the angular aperture of the cannula, and either the needle or probe introduced along the cannula and kept there for a few minutes, to allow of clotting to take place in the lung, and then slowly withdrawn. In this way I have found no subsequent hæmothorax or pneumothorax, and there has been slight, if any, local pleurisy: (8,) The local after-treatment consists in applying a piece of plaster to the puncture, and a bandage if the dyspnœa will admit of it."

REFERENCES.—[1]"Lancet," vol. i., 1891, pp. 1368 and 1420; [2]"Pneumonia," 2nd edition, p. 327; [3]"Brit. Med. Jour.," vol. ii., 1890, p. 1066; [4]Ibid., p. 1177; [5]Ibid., p. 1425; [6]Berlin. klin. Woch., Oct. 6, 1890; [7]"Lancet," vol. i., 1891, p. 252; Ibid., p. 1029; Ibid., vol. ii., 1890, p. 915; [8]"Bolnitchnaia Gazeta Botkïna," No. 29, 1890, p. 713; [9]"Lancet," vol. ii., 1890, p. 760; [10]Ibid., p. 1170; [11]Ibid., p. 1375; [12]Ibid. vol. ii., 1891, p. 493; [13]"Medical Chronicle," January and February, 1891; [14]"Lancet," vol. i., 1891, pp. 247 and 302; [15]"Therap. Monat.," Feb., 1891; [16]"New York Medical Journal," Jan. 31, 1891; [17]"Boston Med. and Surg. Journ." No. 21, 1890; [18]"London Med. Recorder," Sept. 20, 1890; "New York Med. Journ.," Oct. 11, 1890; "Revue de Thérap.," Dec. 1, 1890.

POLYPUS OF EAR. (See "Ear.")

POTT'S DISEASE. (See "Orthopædics.")

PREGNANCY (Disorders of). *A. H. N. Lewers, M.D.*

Vomiting.— This is a frequent and often troublesome symptom during the earlier months of pregnancy; the cases, however, where the vomiting is really so severe as to justify any apprehension as to the life of the patient are relatively exceedingly rare, and are unfortunately but little influenced by any treatment short of emptying the uterus.

It is very important that the vomiting of ordinary severity should not be confused with the serious and rarer form just mentioned. This error is particularly apt to be made by the patient or her friends, rather than by the medical attendant, who often has much difficulty in persuading those concerned that there is no real cause for interference. The distinction lies in recognizing that in the cases of ordinary severity the patient assimilates at all events sufficient food to

maintain her general nutrition fairly, that the lips, conjunctivæ, etc., are of normal colour, and the pulse-rate little, if at all, increased.

For such cases the following is the line of treatment usually pursued. The patient should take some nourishment before getting up.

Oxalate of Cerium, 4 to 5 grain doses, in the form of pill, thrice daily, has frequently seemed of service. **Bromide of Potassium,** in 20 grain doses, t. d. s., is also worth trying. **Iced Champagne,** when there is no tendency to alcoholism, may be prescribed. Again, **Subnitrate of Bismuth,** in 20 grain doses, and effervescing mixtures containing small doses (♏ i—iij) of **Dilute Hydrocyanic Acid** are often followed by an amelioration of the symptoms. For example :—

℞ Acid. Hydrocyan. dil. ♏ij | Infus. Gen. Co. ad ℥j
Sod. Bicarb. ʒj |

Sig.—To be taken effervescing, with gr. 16 of citric acid.

Morphine, either hypodermically or in the form of suppository, may be tried in cases not yielding to simpler treatment.

Dr. Wertheimer[1], of Freiburg, records a case of the uncontrollable vomiting of pregnancy, in which, after the failure of belladonna and morphine, the vomiting ceased after the use of a mixture containing the **Bromides of Potassium, Sodium,** and **Ammonium.** A dose was given every two hours. In this case abortion had been induced in two previous pregnancies on account of the vomiting.

Dr. Gottschalk, of Berlin, recommended **Menthol** for the vomiting of pregnancy, as noticed in the "Med. Annual" last year, p. 407. The prescription was :—

℞ Menthol gr. 15 | Aq. ad ℥vj
Sp. Vini Rect. ʒvj |

Sig.—℥ss every hour.

Dr. Amand Routh[2] speaks highly of the application of iodine paint to the cervix and the end of its canal. In his hands this measure was uniformly successful. If the sickness recurred, as it might do from the fifth to the fifteenth day, it was almost always permanently stopped by a second application.

Copeman's plan of slightly dilating the cervix should only be tried in cases where the other means at our disposal have failed, and in really severe cases where the patient's condition is becoming serious, for there is a considerable chance that abortion or miscarriage may result from it. If the os is sufficiently open the dilatation may be effected by passing the finger into the cervical canal as far as, but not beyond, the internal os. If the os is not patulous, dilators may be used similarly instead of the finger. This treatment should only be adopted after consultation.

Micturition (Disorders of) During Pregnancy.—Some irritability of the bladder, as evidenced by frequent calls to pass water, is not uncommon during pregnancy, and needs no treatment.

Retention of Urine is a symptom of great significance, and should always lead to a thorough examination of the patient. Most frequently it occurs about the end of the third or the beginning of the fourth month, about the time when the uterus is becoming too large to be accommodated in the true pelvis, and depends on **Retroversion of the Gravid Uterus.** As the retention of urine becomes extreme, some dribbling away of small quantities of urine usually occurs, and this should not lead to the impression that the patient is passing her water properly. As a matter of experience, however, the real state of affairs is not rarely quite unsuspected. I have seen more than one such case treated solely by medicine, no examination having been made.

When the diagnosis has been arrived at, the first thing, of course, is to draw off the urine. It is no uncommon thing for five pints or more to be drawn off in these cases.

After this has been done, two courses are open to us. We may either at once endeavour to replace the uterus, and this rarely gives rise to any difficulty if the patient is placed under the influence of an anæsthetic. Or another equally good plan is to keep the patient in bed and have the urine drawn off every six hours. It usually happens that the uterus rises up of itself in the course of a day or two.

REFERENCES.—[1] "Centralbl. für Gynäk," Dec. 20, 1890; [2] "Practitioner," Aug., 1891; "New York Med. Jour.," Oct. 18, 1890; "New York Med. Jour.," Dec. 27, 1890; "Therapeutic Gazette," Feb. 16, 1891.

PREGNANCY (**Extra-Uterine**). See p. 234.

PROGRESSIVE MUSCULAR ATROPHY.

Synopsis.—(Vol. 1890, p. 435.) Iodide of Potash, Arsenic, Rubbing and Galvanism cured a case due to syphilis and rheumatism.

PROSTATE (**Diseases of**). *E. Hurry Fenwick, F.R.C.S.*

Chronic inflammation of the prostate gland is the subject of an able article by Dr. Oberländer, of Dresden[1]. He remarks that of the chronic inflammations of the prostate the most frequent is the so-called "old man's hypertrophy." But there are other forms of chronic prostatitis which occur earlier in life. The patient may have suffered from gonorrhœa, but in about half the number of cases excesses of various kinds and masturbation seem to be the causes, especially in association with a predisposition to catarrh of the mucous membranes.

The local trouble caused by chronic prostatitis is often slight, consisting in burning on micturition, especially after errors in diet, occasional increased urgency to urinate, and frequently nervous sexual weakness. Ejaculation is often premature, and coitus is followed by great bodily and mental exhaustion. Sometimes the last named, together with various other nervous symptoms, are all that the patient complains of. The prostate, examined *per rectum*, is usually found to be more or less irregularly enlarged. As a rule one lobe only is affected, and can be felt to be soft and uneven, rarely or never hard. A feeling of pressure in the rectum and perinæum may also be complained of. With the urethroscope changes in the urethral mucous membrane can always be made out. As general treatment, removal to the seaside or to the mountains, or residence in a well-managed institution is recommended, together with careful attention to diet and regular action of the bowels. Locally, **Iodoform Suppositories,** containing from ¾ of a grain to 1½ grains each, are to be used at night after clearing the rectum by means of an enema. In sensitive persons the larger dose of iodoform *per rectum* may give rise to symptoms of intoxication. The application of a 1 or 2 per cent. solution of **Nitrate of Silver** to the posterior urethra once or twice a week; the introduction of **Large Metal Sounds**, and Winternitz's "**Psychrophore**" are also frequently beneficial. The affection is very liable to relapse. The cases due to gonorrhœa get well soonest.

Prostatic stenosis, causing very severe pain in the anterior extremity of the urethra, receives attention at the hands of Mr. Arbuthnot Lane[2], and his experience is illustrated by a very important case. A man aged forty-two, whose mother had died of consumption, was seized with an almost unbearable pain in the floor of the glans penis. It was violent and constant. Suprapubic cystotomy was performed, all other methods of examination having failed to reveal the cause, and a stenosed prostatic canal was discovered. It was forcibly dilated, and the patient was temporarily relieved.

The "Enlarged" Prostate.—The palliation or cure of the symptoms dependent on the enlarged senile prostate has called forth many valuable additions to the year's literature.

The method of Bottini[3], of Pavia, which consists in burning away the obstructing part of the gland by means of a "thermo-galvanic cautery," introduced through the urethra is again resuscitated. The reporter has used this method, and believes that in a limited number of cases it will prove of use. Two sorts of instruments are needed. One is a cautery plate and the other a cautery knife. Each is inserted into the con-

cavity of a short-beaked hollow catheter, which carries conducting cords to the plate or knife, as the case may be, and two water canals for cooling purposes. The plate instrument is passed like an ordinary catheter, and turned over when the point has entered the bladder, as in searching for stone, and gently drawn forwards so as to cause the beak to hitch against the prostate and bring the cautery plate against the bar. The current is then switched on for a minute. The battery is cumbersome and uncertain. It consists of four accumulators, and it can be charged from a dynamo.

Fifty-seven cases are now recorded by Bottini, with two deaths. In thirty-two cases a perfect cure was effected, in eleven there was an improvement, and in twelve the result was *nil*. The method is not altogether free from danger unless the greatest care is used. It should be reserved for cases in which strangury is persistent. It is contraindicated when kidney disease is present.

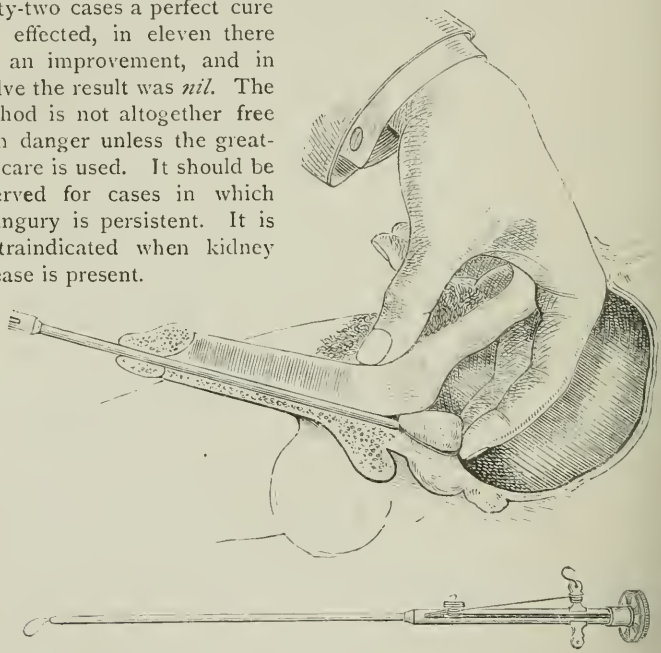


Fig. 26.

Mr. R. F. Tobin[4] successfully attacked and removed a salient horseshoe collar of intravesical outgrowth by means of an écraseur (*Fig.* 26) introduced per urethram, the loop of wire being slipped over the projecting lobes and held in position by the forefinger, introduced into the bladder through a suprapubic opening. The patient was sixty years old and had suffered eleven years. The écraseur was extem-

porized in this way : A wire doubled and bent to a suitable curve was passed through the urethra into the bladder ; a silver catheter was then slipped up along it, but its point, instead of being passed into the bladder, was made to impinge against the urethral obstruction. Next the double wire lying in the bladder was opened out into a loop and slipped over the enlarged middle lobe, and was kept embedded round its base by means of two fingers passed through the abdominal incision. While this wire was being made to cut its way through the part it encircled, the inserted fingers, helped by the point of the catheter, which was depressed to the spot it desired to reach, regulated its direction. As the lateral lobe was not of a shape to be encircled by the wire, it was necessary to divide it into two by nicking it deeply with scissors. Each half was then dealt with as had been the middle lobe.

The surface left was found to be smooth, and to slope into the urethra. There was little or no bleeding.

Mr. Tobin claims that this method of resecting the prostate gland has the following advantages : (1,) As much of the gland as interferes with the escape of the urine is removed and no more ; (2,) The portion that blocks the urethra is removed in a satisfactory manner, for the wire cuts up to the point where the instrument has been stopped by the obstruction ; (3,) A smooth surface sloping into the urethra is left instead of the more or less rough one that must result from taking away the gland piecemeal with forceps ; (4,) There is very little hæmorrhage.

The reporter can endorse the value of Mr. Tobin's manœuvre, having himself successfully used a loop passed through the small *débris* hole in the female blade of a non-fenestrated lithotrite.

Dr. W. T. Belfield[5], of Chicago, claims that accumulated clinical observation proves : (1,) That in most cases the failure to evacuate the bladder is due in no wise to degeneration of the vesical muscles, but solely to the mechanical obstruction offered by prostatic growths ; since the removal of such obstacles has been followed in over two-thirds of the cases previously dependent upon the catheter by restoration of the vesical functions ; (2,) That the enlargement of the prostate commonly called "senile" hypertrophy is not limited to advanced life ; (3,) That the prostatic obstruction is usually of such form as to permit excision, for out of seventy-seven cases in which suprapubic section was done, in sixty-two, such obstacles were found and removed.

He admits, however, that in many prostatics of advanced age, a degeneration of the vesical walls co-exists, so that the contractility of

the bladder is much impaired. Evidences of general tendency to sclerosis, as shown by rigid arteries, polyuria, often hæmaturia, extremely hard prostate, feeble flow of urine through catheter, and complete evacuation of the bladder only by pressure upon the hypogastrium, are the symptoms that point to degeneration, and render operative interference unpromising.

Dr. Weir[6], of New York, declares that in his judgment the removal of obstructions of prostatic origin will afford the greatest success in those in whom the interference with urination has lasted but a comparatively few years—in other words, where the secondary changes in the kidney have not advanced to a very serious extent. "This factor is an important one concerning the reserve force of the patient, since to the suprapubic section one may be forced to add a perineal incision in order to thoroughly accomplish the removal of the obstruction, particularly at the lower margins of the vesical orifice and possibly in the prostatic urethra itself. The scissors in the removal of the prostatic outgrowths is an unsatisfactory instrument, and I propose to use an amygdalotome in the next case of this kind."

Gouley[7], in an able article on "Retention of Urine from Prostatic Obstruction in Elderly Men," sums up as follows :—

The management of ordinary cases of *chronic* retention of urine from prostatic obstruction, without false routes, may be summarized as follows: Catheterism having been successful, only a part of the stagnant urine should be drawn off, and the bladder not completely emptied for a day or two, and sometimes not for a week, but the quantity of retained urine should be lessened every day. Then the bladder should be daily washed. In many cases it is not wise to begin at once with irrigations, or to use them too frequently. Bladders that have long contained purulent, slimy urine do not bear the contact of limpid fluids of low specific gravity well at first. It is therefore necessary to increase the density of the water used for vesical irrigation in such, and, indeed, in the great majority of cases.

A good formula for vesical irrigation is the following, after dilution of 1 in 20 :—

℞ Hydrarg. Chloridi Corrosivi	gr. v	Acidi Borici	ʒj
Ammonii Chloridi	gr. xx	Glycerini	fl. ʒviij
Spir. Gaultheriæ	fl. ʒss	M.	

To ½ a fluid ounce of this solution are added 7 fluid ounces of warm water (110° F.) and 2½ fluid ounces of peroxide of hydrogen solution.

These 10 ounces of fluid are sufficient for four washings of 2½ ounces at each sitting. Only in very exceptional cases

should the bladder be irrigated more than once a day. After the bladder has been completely emptied, evacuating catheterism should be employed every five or six hours, except in cases of contracture with diminished capacity, when the catheter may be needed every two hours.

REFERENCES.—[1]"Journ. Cut. and Gen.-Urin. Diseases," July, 1891; "Brit. Med. Journ.," Supplement (165), Aug. 13, 1891; [2]"Lancet," April 25, 1891; [3]"Lancet," 1885, vol. i., p. 582; "Brit. Med. Journ.," vol. i., 1891, p. 1121; [4]"Brit. Med. Journ.," March 14, 1891; [5]"Annals of Surg.," Feb. 7, 1891; [6]"New York Med. Journ.," May 30, 1891; [7]"New York Med. Journ.," Nov. 1, 1890.

Synopsis.—(Vol. 1890, p. 435.) **Alkalies** and **Colchicum** in cases of gouty prostato-urethritis due to excessive acidity of urine, etc.; in prostatic catarrh inject small quantities of astringent solutions, *e.g.*, **Nitrate of Silver**; occasionally, **Cubebs, Buchu, Sandalwood,** or **Copaiba,** are useful; in chronic prostatitis, use tonics such as **Iron** in non-astringent forms, and **Nux Vomica** or **Strychnine** may be added and also **Belladonna,** if there be micturition during sleep; **Ergotine** is useful if the organ is large and aching is caused by walking, standing, etc.; when prostate is enlarged, soft, and not tender, the **Cold Sitz Bath** at 50° Fh., lowered to 40°, and used once or twice daily for from two to ten minutes, is useful; also **Cold Douche** on perinæum or anus, but **Cold Enemata** are the most useful, two to four ounces of water being thrown into rectum and retained; **Blistering** the perinæum; **Caustic Injections** are used after other means; **Nitrate of Silver Solution,** grs. xx to xxx to ℥j, and 10 minims injected at a time is useful. If prostatitis be due to masturbation or excessive venery, **Ext. Salix. Nigra. Liq.,** ℥j thrice daily, checks involuntary emissions; **Ext. Damian. Liq.** is useful for the sexual weakness following prostatitis. In tuberculosis of prostate, the ragged cavities must be washed out, antiseptically washing out the bladder first with small injections of **Boric Acid Solution,** and then injecting ℥ij of **Quinine Solution** (grs. ij to ℥j), or **Iodoform Emulsion** instead of the quinine.

PRURITUS. *T. Colcott Fox, M.B.*

C. Lange, of Copenhagen, mentions **Arsenic** internally and **Carbolic Acid** compresses locally as means of treatment much relied on. He obtained prompt action in four cases of universal pruritus, in two of which abundant uric acid and water were found by **Sodium Bicarbonate** and **Lithium Carbonate** administered internally.

Butte recommends a decoction of **Guaco** in affections of the skin accompanied by pruritus, but it is too irritating for weeping eruptions. It paralyzes the nervous centres of sensation. The decoction is made by boiling for a quarter of an hour 30 grammes of crushed guaco, 5 grammes of bicarbonate of soda, and 1000 grammes of water, then macerating the product for an hour and decanting.

Corlett describes *Pruritus Hiemalis* or *Frost* or *Winter Itch* as met with frequently in the northern parts of America, and especially along the chain of great lakes, occasionally in London (Hutchinson and

Payne) and rarely in Paris. It disappears in summer to reappear in winter. Eczema and urticaria may arise from rubbing and scratching. He recommends use of silk underclothing, **Ichthyol** internally, **Resorcin, Menthol,** or **Ichthyol** externally, and sometimes change to a uniformly warm and humid climate. He gives the following :—

℞ Menthol	10 per cent.	Aqua	ad ℥iv
Glycerin	℥ij		
℞ Ichthyol Ammon. Sul.	3–10 p.c.	Alcohol	
Glycerin	℥ij	Aqua	āā q.s. ad ℥iv
℞ Resorcin (Merck's)	℥j	Aqua	ad ℥iv
Glycerin	℥ij		

In a discussion Dr. White said **Carbolic Acid** was the best application to control itching.

Ohmann-Dumesnil recommends for a lotion :—

℞ Hydrarg. Bichlor.	gr. jss	Glycer.	℥ij
Ammon. Chlor.	gr. ij	Aq. Rosar.	ad ℥viij
Acidi Carbolici	℥j (more or less)		

Lustgarten in pruritus ani uses suppositories containing **Oleate of Cocaine.**

Blaschko, of Berlin, has obtained excellent results in itching skin diseases, *e.g.*, the lichen urticatus of infants, from **Antipyrin** internally, and **Tar Baths** and **Naphthol Ointment** externally.

REFERENCES.—Lange, "Hospitals Tidende," Nov. 24, 1890; Butte, "Ann. de Polichnique de Paris," Nov. 1890; Corlett, "Journ. Cut. and Gen. Urin. Dis.," Feb. 1891; Ohmann-Dumesnil, "St. Louis Med. and Surg. Journ.," July, 1891; Blaschko, "Berlin. klin. Woch.," No. 22, 1891; E. B. Bronson, "New York Med. Journ.," Nov. 15, 1890.

Synopsis.—(Vol. 1890, p. 444.) In pruritus senilis, pruritus ani, or itching due to hæmorrhoids, wash with **Lukewarm Water** and good soap, and rub in the following, ℞ Lanolin pur. 30 parts, Vaselini, Ol. Olivæ, āā 20 parts, M.; **Cocaine** may be added if itching is very severe. ℞ Cocainæ Hydrochlor ¼ to ½ part, Lanolin Pur. 30 parts, Vaselini, Ol. Olivæ, āā 20 parts; **Flowers of Sulphur,** 10%, may be added. **Menthol:** ℞ Menthol gr. xxij to xxvij, Sp. Vin. Rect. ℥j⅔. ℞ Menthol gr. xxxvij, Ol. Oliv. ℥ij to iij, Lanolin ad ℥ij⅔. ℞ Menthol gr. xlviij, Bals. Peruv. ℥iss, Ung. Zinc. Benzoat., Lanolini Pur. āā ad. ℥ij, M. **Menthol,** as a 10 to 15% ointment, is very valuable in chronic eczema.

(Vol. 1891, p. 408.) **Tincture or Spirit of Menthol:** ℞ Menthol, 1 to 3 parts; 40% Alcohol, 50 to 60 parts; for external use. **Liniment of Menthol;** ℞ Menthol 3 parts, Olive Oil 30 parts, Lanolin 30 parts. **Ointment of Menthol:** ℞ Menthol 2½ parts, Balsam of Peru 5 parts, Lanolin 100 parts. All these are useful in pruritus of eczema, itch, or in urticaria. For pruritus senilis uncomplicated by any other dermatosis, Besnier advises (1,) **Starch Baths;** (2,) **Bathing** the parts in **Water** at 40°C. each evening, adding to each litre of water ℞ Ac. Carbolici 10 gram., Aceti Aromatici 500 gram.; (3,)

Then powder the bathed parts with ℞ Amyli 90 gram., Bismuthi Salicylatis 20 gram., or ℞ Acidi Salic. Subt. Pulv. 20 gram., Amyli 180 gram. For pruritus vulvæ the Continuous Current is useful. Boracic Lotions and Ointments are the most generally useful.

PRURITUS VULVÆ. *R. Milne Murray, M.A., M.B.*

In the "Trans. Edin. Obst. Society," vol. xvi., Dr. J. C. Webster contributes a very interesting paper. He discusses the nerve endings in the labia minora and clitoris, and describes the different touch corpuscles, end bulbs, etc. He believes that many cases of pruritus vulvæ are due to pathological changes in the ordinary structures, or of special developments of abnormal modifications of them. In certain cases described the itching complained of seemed to be brought about by the constant scratching, which tended to distribute the sensation over a wider region.

With reference to the treatment, the author points out that the local application of remedies in the form of lotions, ointments, etc., invariably resulted in practical failure. Basing his opinion on his views as to the pathology above referred to, the author recommends "as the only way in which we can bring about a complete cure, the thorough removal of the affected parts." In three cases he removed a spindle-shaped mass of tissue, extending from half an inch above the clitoris as far down as a point midway between the glans and the urethral orifice. The wound was closed from above downwards by a continuous suture of juniper catgut. The removal of these affected areas resulted in a complete deliverance from the trouble. In the discussion which followed this paper, R. Milne Murray recorded one case of an elderly patient who had suffered for many years from pruritus which had resisted all attempts at treatment. A complete cure was effected by the free destruction of the superficial tissue round the clitoris, vestibule, and meatus by the galvano-caustic loop.

PSORIASIS. *T. Colcott Fox, M.B.*

Many authors, but especially French, have noticed the co-existence of psoriasis and gout, and rheumatism, but Besnier who has set several of his pupils to work on the subject, believes that psoriasis and the arthropathies connected with it are both subordinated to one pathogenic condition. He gives the proportion of arthropathic psoriasis as probably about 5 per cent. In a certain number of cases of psoriasis, these neuralgias, myalgias, melalgias, articular troubles can precede, follow, or occur simultaneously with the eruption. These deformities cannot be satisfactorily ascribed to true rheumatism, but are of nervous origin, either peripheral or medullary.

Mapother, believing psoriasis to be probably parasitic, gives as a

rule 3 grains of blue pill every night for about eight weeks, the average time at which the eruption is removed being about six weeks. The same cautions are to be observed as in treating syphilis ; 20 drop doses of Donovan's solution are effective, also the protoiodide. Diluted mercurial ointments are used externally.

In an elaborate essay, Polotebnoff analyzes the current theories of the etiology of psoriasis, and concludes that it is the result of nervous disturbances of various kinds, *i.e.*, it is a neurosis. He points out the co-existence of severe headache, family neuropathic affections, the apparent connection with severe psychical shock, clinical abnormalities in the nervous system, diseases of bones and joints, typhus fever, injuries of the head, intemperance, and minor neuropathic symptoms. In accordance with these views, Polotebnoff treats the condition of the nervous system especially. He recommends **Sea-bathing,** warm or cold. **Bromine Salts,** are the most useful internally till the acute nerve symptoms are allayed, and then **Arsenic** in large doses, which has a special affinity for nerve tissues. **Ergot** is useful.

Fabry used the following **Hydroxylamine** compositions :—

℞ Hydroxylamine Muriate 3 to 5 grains | Carbonate of Calcium sufficient
Spirits of Wine 1½ oz. | to neuralize.

Or :—

℞ Hydroxylamine Muriate 15 grains | Calcium Carbonate sufficient
Pure Water 1½ oz | to neutralize.

Weissblum found Hydroxylamine excited severe dermatitis, but thought **Aristol** useful in light forms not needing rapid cure, and for uncovered parts. Guttmann uses a 10 per cent. **Ointment** of **Hydracetin.** The following are two prescriptions recommended :—

℞ Acid. Pyrogallici, Ichthyol, | Vaseline 35 parts
Acid. Salicylici āā 4 to 5 pts |

Daily frictions in small patches on the scalp, unless irritation is produced.

℞ Saponis Viridis, Vaselin āā 20 | Acid. Salicylici et Pyrogallici āā 1 pt.
Ichthyol 2 |

For isolated patches.

REFERENCES.—Kaposi's "Lectures," 2nd French ed., 1891 ; "Rév. Génér. de Chir. et de Thér.," 1890 ; Weissblum, "Viertelj f. Derm. u. Syph.," 1891, Heft 1 ; Kromayer, "Archiv. f. Derm. u. Syph.," 1890, xxii., 557 ; Mapother, "Brit Med. Journ.," Jan. 17, 1891 ; Polotebnoff, "Monat., fur Prakt. Derm.," 1891, analyzed in "Brit. Journ. Derm.," Oct. 1891.

Synopsis.—(Vol. 1891, p. 411.) **Arsenic** in form of Asiatic Pills or Pearson's or Fowler's solution ; also used subcutaneously, either pure or combined with some antiseptic: **Tar Water, Carbolic Acid, Turpentine** (internally and

externally), Copaiba, Phosphorus and Cantharides have been used. Bulkley advises Alkalies, *e.g.*, Liq. Potassii Acetatis or of Acetate of Lithium or Calcium; Cod Liver Oil and Iron are helpful, and pure woollen garments should be worn next the body. Gutteling advises Potassium Iodide in large doses until ℥ij daily is taken. Bulkley advises Ung. Hydrargyri Ammoniati. Besnier uses β-Naphthol, 10% ointment rubbed in every night, washing it off with soap and warm water in the morning, and dusting with starch powder. Kaposi recommends 15% ointment of β-Naphthol. Hutchinson uses Chrysophanic Acid, combined with White Precipitate Ointment and Liquor Carbonis Detergens, giving Arsenic internally at the same time. Chrysophanic Acid has been given in gr. ½ dose. Goa Powder is a cheap substitute for the acid. Corrosive Sublimate and Sal Ammoniac Baths, 1 part of each salt to 2000 parts of water have been proposed. Caserini suggests Perchloride of Iron in solution or as ointment with thirty times its weight of Lard. Culling advises Alkaline Baths with Carbolised Glycerine and Arsenic internally. Hydrazine Salicylic Acid internally and externally. Chrysarobin, gr. ½, cautiously increased is better than Chrysophanic Acid.

Aristol in powder or dissolved in Ether or Collodion, 1 part to 10, or combined with Vaseline, Lanolin or Zinc Starch (p. 11). Sulphide of Arsenic, gr. $\frac{1}{100}$ (p. 12). Hydroxylamin: ℞ Hydroxylamin Muriat. ·2 to ·5, Sp. Vini 100, Calc. Carbon. q.s. ad. neutr. Apply with a brush or a watery solution, 1 in 1000, as a compress, after removing scales by bathing, rubbing with Green Soap and application of 10% Zinc Salve (p. 34).

PSOROSPERMOSIS. *T. Colcott Fox, M.B.*

The presence in the human body of objects believed to belong to the animal kingdom, and known as *psorosperms* or *coccidia*, and the part they play in the causation of disease, has of late attracted increasing interest and attention. A class, *sporozoa*, founded by Leuckart, comprises some unicellular organisms, and these were classified by Balbiani as: (1,) Gregarines; (2,) Oviform psorosperms or coccidia; (3,) Sarcosporids, or tubes of Miescher; (4,) Myxosporids, or psorosperms of fishes; and (5,) Microsporids, or psorosperms of the articulata. They all live as parasites on other animals, and give rise in certain cases to mortal maladies. It is necessary to review very briefly what is known about these sporozoa. The *gregarines* are well known for their parasitism on insects, and have been observed to multiply by conjugation, to form spores, and these again "germs," which are mobile, and enter epithelial cells. The *sarcosporids*, usually found in the muscular tissue of vertebrates, have not been proved to be pathogenic, unless Unverricht's "polymyositis" may be so caused. The *myxosporids* occur on the skin and mucous membranes of aquatic vertebrata, and their spores are furnished with projectile threads. Walter Sibley showed to the London Pathological Society a carp with tumours composed of clusters of organisms in the muscles. To one of the *microsporids* of insects is attributable the silkworm disease (*pebrine*). The *coccidia* are found in the epithelial tissues and cells of

vertebrata, and are said to be distinguished from other groups of psorosperms by the absence of movements, their intercellular habitat, their solitary encystment not preceded by conjugation, and the relatively restricted number of spores which form. Eve reported to the London Pathological Society a case of miliary psorospermial cysts of the ureters in a woman, and in the same year Bland Sutton unearthed a similar specimen in the Middlesex Hospital Museum, whilst Quarry Silcock showed a specimen of vesiculation of the mucous membrane of the male bladder and urethra. References to other cases were given in the discussions. Many other observers have noticed similar bodies in lobuled pavement, epithelioma, etc., for instance, Thoma, of Dorpat, Macallum, of Toronto, Hache, and Borel. Delépine stated that he had found them in tumours of the skin and mucous membranes, and of the liver in different human subjects. Two remarkable observations were then made. Darier, in 1889, discovered coccidia in a disease of the skin, described as *psorospermose folliculaire végétante*, which is always more or less generalized, but attains its greatest development in the articular folds, around the genitals, on the flanks, on the presternal region, the scalp, and the face. The eruption begins by pin-head-sized, firm, uncoloured papules, which become a little hyperæmic as they increase in size. They grow hemispherical or flattened, covered with a very adherent darkened crust, which dips into a dilated follicle. These lesions tend to become confluent, to vegetate, and to be excoriated by scratching the whole picture being a very curious and characteristic one. Coccidia are not found in all acne or follicular keratoses, whilst in this particular skin malady they are found in enormous numbers, and only secondarily and slowly produce a morbid epithelial reaction and papillary overgrowths. Cases recorded previously under different names have been identified and fresh cases have been observed, and Darier's observations confirmed. Again, in 1889, Darier and Wickham discovered the coccidia in *Paget's disease of the nipple*, (malignant papillary dermatitis of Thin, mammillitis maligna of Piffard, épithéliomatose eczématoïde de la mamelle of Besnier) and ascribed to their penetration into the galactophorous ducts the epithelial outgrowth which constitutes the tumour, and to their extension into the glandular canals the secondary cancer. The presence of these bodies in this affection has been abundantly confirmed, and their absence noted in ordinary cases of eczema.

In connection with this disease it is to be noted that Crocker has described a most interesting condition on the scrotum associated with the presence of coccidia, and closely simulating Paget's

disease of the nipple, whilst recently Tarnovsky and Pospeloff have recorded cases of coccidiosis of the glans penis, and foreskin respectively; in the one simulating Paget's disease and intractable, in the other forming a hard cartilage-like growth.

Peters found coccidia, or encapsuled gregarines, in 33 per cent. of the sections of membrane coughed up in six fatal cases of *diphtheria*.

The etiology of *molluscum contagiosum*, and the peculiar "molluscoid bodies," have always proved a great mystery, and, stimulated by Bollinger's suggestion, observers began to investigate the disease anew, with a view of proving the causation by coccidia. This pathogeny is, however, much more doubtful than in the other affections mentioned, and is keenly contested.

So far, the evidence of the causation of any of these affections by psorosperms has not been complete. We know such organisms exist in various vertebrata, articulata, etc.; their life history has been traced; some appear to be mobile in certain stages and to enter epithelial cells, and they are associated constantly with certain pathological states. In man the argument for the direct causation by psorosperms of the diseases mentioned is derived chiefly from analogy. We have the constant presence of a particular body with a special morbid condition, and the constant absence of the organism in other conditions. But it is contended that in man these bodies are not living, but appearances closely simulating psorosperms are produced by epithelial cells undergoing various changes of degeneration, etc.; the multiformity also of the diseased conditions with which they are associated is pointed out. Possibly there may be different species, or they may act on distinct sets of cells. Attempts to trace with certainty the mode of propagation of the supposed psorospermiæ found in the human being have been as yet unsuccessful. Methods of staining also have failed to differentiate them conclusively from various cell changes.

REFERENCES.—The bibliography is too copious to give in detail, but further information can be obtained from the following sources:—

Urinary Organs.—Eve, Bland Sutton and Silcock, "London Pathological Society," 1889; Albarran, "XXth Internat. Congress."

Diphtheria.—Peter's, "Berliner med. Woch.," No. 21, 1888. (Citations from veterinary authorities tending to show transmission of these parasites to man, especially children.)

Paget's Disease of the Nipple.—See many references collected by the translators of Kaposi's "Lectures," 2nd French ed., 1891; also Bowlby, "Med. Chir. Trans.," Lond., 1891; J. Hutchinson, jun., idem, and "Lond. Path. Soc. Trans.," 1890, and "Brit. Journ. Derm.,"

Aug. and Sept., 1891 ; O'Niell, "Brit. Med. Journ.," April 18, 1891 ; Tarnovsky and Pospeloff (quoted "Brit. Journ. Derm.," 1891) ; F. J. Paul, "Liverpool Med. Chir. Journ.," Jan., 1891, p. 231.

Psorospermosis folliculaire végétante.—See appendix to Kaposi's "Lectures," 2nd French ed., 1891 ; Mansuroff and Zeleneff, quoted in "Brit. Journ. Derm.," 1891 ; Bulkley, "Med. News," 1890 ; Bœck, "Monats. f. Prakt. Derm.," Bd. ii, No. 3, 1891 ; Lustgarten, "Internat. Med. Con.," 1890 ; and "Journ. Cut. and Gen.-Urin. Dis.," Jan., 1891 ; Robinson, "Canadian Pract.," June, 1891.

Molloscum Contagiosum.—Kaposi's "Lectures," 2nd French ed., 1891.

Epithelioma—Kaposi's "Lects.," 2nd French ed., 1891 ; "Appendix on Paget's Disease," p. 658 *et seq.* ; Ramsay Wright, "Canad. Pract.," 1890.

See also on *Cultivation Experiments, etc.*, Shattock and Ballance, "Lond. Path. Soc.," 1891 ; Delépine, idem ; Walter Sibley, idem ; L. Pfeiffer, "Die Protozœn als Krauk heitserreger," Jena. Verlag von Gustav Fischer, 1890.

Parasitic Origin of Cancer.—Albarran, "Revista de Ciencias Medicas," Oct. 29, 1890 (quoted in "Med. Bulletin").

PTOSIS. (See "Eye.")

PUERPERAL FEVER.

A. H. N. Lewers, M.D.

It is becoming more and more generally acknowledged that in the large majority of cases, if not in all, puerperal fever is a preventable disease, since it is due in most cases to the introduction of septic matter, either by the hands of the attendant or on instruments used.

It should be the invariable rule for those engaged in the practice of midwifery :—

(1,) To keep the nails short, and before making a vaginal examination to make the hands and nails thoroughly clean by the use of soap and water *and a nailbrush.* This can be easily carried in the accoucheur's bag.

(2,) Also, before making a vaginal examination the hands should be thoroughly soaked each time in an efficient antiseptic solution.

Corrosive Sublimate solution, 1 in 1000, may be made readily, either by carrying pellets, one of which dissolved in a pint of water makes a solution of the required strength, or by carrying a **Glycerine Solution of Sublimate** of the strength gr. x. to each fluid drachm. One drachm stirred up with a pint of water gives a solution of 1 in 1000 sufficiently accurately for practical purposes.

Another efficient antiseptic is **Iodine Water,** made by adding ℥ij of

Tinct. Iodi to Oj of water. This has an advantage where the antiseptic has to be entrusted to relatively unskilled persons, and one can also tell the strength of the solution by its colour. Iodine water of the strength mentioned may be safely used for an indefinite time for vaginal injections, both in midwifery practice and in other cases. It may be also safely employed when the uterus has to be washed out, and also for washing out the peritoneum in abdominal operations. I always use it for such cases, and have never seen any harm result.

Another important point is *to avoid more frequent examination* of the case than is needed to ascertain the progress of the labour.

Antiseptic vaginal injections at the commencement of labour and during the first ten days of the puerperal state may be regarded as optional, but on the whole desirable.

It should be remembered that the so-called "auto-genetic" puerperal fever depends on the decomposition of retained clots, pieces of membrane, etc., and its prevention chiefly consists in the proper management of the third stage of labour, particularly making certain that no part of the placenta or membranes is left behind, and that the uterus is well contracted before the case is left.

It is particularly where fever arises from the decomposition of something retained *in utero* that washing out the uterus through a double-channelled tube with a hot antiseptic solution, such as iodine water, finds its legitimate field, the material retained having been, of course, first removed.

Dr. Boxall read an interesting and thoughtful paper on fœtor of the lochial discharges before the Harveian Society[1].

The following are the conclusions he arrives at: (1,) That septic infection may take place without fœtor; (2,) That fœtor may occur without sepsis or fever; (3,) That fœtor is more frequent in cases where the tissues are bruised and torn, and therefore in primiparæ, and in operation cases; (4,) That fœtor is generally (though not invariably) associated with fever, but in such cases the fever almost invariably precedes the fœtor by a considerable interval; (5,) That the presence or absence of fœtor is a very uncertain guide to the presence or absence of sepsis; (6,) That in any case, as fœtor invariably indicates a failure to maintain local asepsis, vigorous antiseptic measures should be at once instituted; (7,) That the vulva and vagina should be first cleansed, and only when this has been done and where real necessity exists should the cleansing be extended to the interior of the uterus.

Dr. Ryan-Tenison,[2] following Haven Ross's and Salemi's experiments, has tried antipyrin as an antigalactogogue in six cases.

In five of these the flow of milk ceased, in the sixth the antipyrin failed to arrest it.

The dose was from 10 to 20 grains, given at night, for from three to five nights.

REFERENCES.—[1]"Practitioner," May, 1891 ; [2]"Brit. Med. Journ.," Oct. 25, 1890.

Synopsis.—(Vol. 1891, p. 414.) For puerperal eclampsia the chief measures are: **Bleeding**; administration of **Chloroform**; **Morphia** hypodermically; **Purgation**; **Pilocarpine** hypodermically; administration of **Chloral** and **Bromide of Potassium** per rectum.

PURPURA. *T. Colcott Fox, M.B.*

It must be remembered that purpura is really only a symptom of different pathological processes. One very important field of observation is being gradually worked up. Already many observers have found organisms associated with purpura hæmorrhagica, especially when the latter occurs as part of primary or secondary infective process.

Many other causes non-microbic acting on the vessels or blood will occasion purpura, and the treatment must vary accordingly.

Koch gives **Ergot** and **Mineral Acids**, and insists on the importance of **Rest.**

REFERENCES.—Hanot and Luzet, "Arch. de Méd. Expér.," vol. ii., No. 6, 1890 ; Paul Claisse, "Archiv. de Méd. Expér.," No. 3, p. 379, 1891 ; Agnes Lowry, "Med. Record," May 9, 1891 ; Kolb, "Arbeiten aus dem Kaiserlichen Gesundheit Amte," Bd. vii., Berlin, 1891 ; Lockwood, "New York Med. Journ.," Nov. 15, 1890.

PURPURA SCORBUTICA. *Frank J. Wethered, M.D.*

Dr. Bertheusson has had exceptional opportunities for the study of this disease in St. Petersburgh ; his conclusions, therefore, are worth noting. They are as follows : (1,) Purpura scorbutica is an infectious disorder ; it occurs in epidemics, especially at certain times of the year (spring and summer), and spreads from one, or several local centres. Other patients in the same ward may be attacked by the disease, and a period of incubation can be determined, which would appear to be somewhat long ; (2,) The "infectious" theory can alone explain the existence of "purpura of wounds" (wound-scurvy), as described by Dr. W. Koch ; (3,) The specific agent of this disease remains as yet unknown. Undoubtedly, absence of potash-salts from the food, and other conditions, may be a predisposing cause ; but cases occur in which no such conditions are present ; (4,) It is very probable that, once cured, the patient receives immunity from a fresh attack. The treatment consists in administration of **Salicylate of**

Soda, and of **Carbolic, Citric, Sulphuric,** and **Phosphoric Acids; Milk Diet,** or use of easily assimilable foods. The best local treatment is to apply compresses soaked in **Aromatic Vinegar** diluted with warm water (1 in 3), and frequent gargles of the mouth with **Boric Acid, Tannin,** etc.

REFERENCE.—"Lond. Med. Record.," March 26, 1891.

RABIES. *Græme M. Hammond, M.D., New York.*

Dr. Spencer reports a case of rabies which developed two years and four months after being bitten by a rabid dog. The victim was five and a half years old at the time she was bitten. Dr. Crane, who saw the child immediately after the occurrence, found a deep punctural wound in the right popliteal space over the insertion of the biceps tendon. He injected **Liq. Hydrargyri Perchloride** (B.P.) into the deepest parts, washed the surface with the same fluid, and then cauterized the wound. The wound healed rapidly, and the circumstance was almost forgotten. Two years and four months later the symptoms of rabies developed, and in twenty-four hours the child was dead. The autopsy was made by Dr. Starkie. He found the sinuses and superficial veins engorged, and the cortex slightly congested, but there was no sign of meningitis. The spinal cord looked quite normal, and there was no increase of cerebro-spinal fluid. The heart contained an *ante-mortem* clot, and the lungs were congested. A rabbit inoculated with a solution made from the medulla became paraplegic, and died in a few days.

REFERENCE.—"Brit. Med. Journ.," Feb. 7, 1891.

Synopsis.—(Vol. 1890, p. 449.) Pencilling the throat with 5% solution of Cocaine relieved spasms and thirst in one case.

RACHITIS. (See "Rickets.")

RECTUM (Fissure and Irritable Ulcer of).

Herbert W. Allingham, F.R.C.S.

Fissure of the rectum is a very painful affection. It occurs at all ages and in both sexes, but is more common in women. It is of a very wearying and worrying nature, and the nervous system is so irritated that some patients imagine that they are suffering from cancer.

The *causes* of fissure or ulcer are numerous. Under one head fall injuries to the delicate mucous membrane at the verge of the anus, straining at stool, the passage of very dry, hard motions, and, on some occasions, severe diarrhœa. Gelatinous and fibrous polypi frequently bring about this malady, and syphilis, whether acquired or hereditary, is by no means an uncommon cause. In children, fissure

often results from a congenital narrowness of the anal orifice. The hypertrophied condition of the sphincters, alluded to in last year's article on "Persistent Constipation," may likewise lead to fissure. Childbirth and various forms of uterine displacement are important factors in the etiology of fissure in women.

Ulcers and fissures vary much in depth and size, some being mere abrasions of the mucous membrane, whilst others are as large as a shilling and lay bare the muscular fibres. Fissures may be simple wounds, or may be inflamed and indurated at their edges, sometimes even having a sloughy base; the position is usually dorsal, or nearly dorsal, and the fissure generally extends to the junction of the mucous membrane with the skin. Ulcers, however (which may be elongated and club shaped, oval, or circular), are generally higher up the bowel, above or about the lower edge of the internal sphincter.

Patients frequently believe that their *symptoms* are due to hæmorrhoids, and complain of a discharge of blood and matter, a swelling outside the bowel, and pain at stool. But great pain on defæcation generally shows that it is not piles, or at any rate not piles alone. For the pain from fissure on the action of the bowels is very severe, and at times excruciating, so that patients often postpone the action, and thereby suffer even more pain later on. After the action of the bowels the pain is sometimes of a burning character, or it may be dull, accompanied by persistent throbbing. The pain depends on the position much more than on the size of the ulcer, for a small crack at the anal orifice may give far more agony than a large ulcer situated further up the rectum.

There are numerous other symptoms, some of a nervous character.

In children and young people, fissure, if not complicated by congenital contraction or polypoid growths, can usually be cured by *palliative treatment*. **Zinc Ointment,** together with **Extract of Belladonna** and **Opium,** should be used night and morning, and the bowels be kept acting gently by **Confection of Senna** with **Sulphur.** The numerous small cracks round the anus found in children suffering from hereditary syphilis should be treated by anti-syphilitic medicines. Indeed, of all fissures those of syphilitic origin are the most amenable to general treatment.

Fissures, if of recent occurrence, may often be cured without operation, especially if situated anteriorly. This is notably the case with women.

Rest in the recumbent position is of much importance; diet should be attended to, and mild laxatives should be given. Various mineral

waters are often of use. The action of the bowels at bedtime instead of in the morning lessens the duration of the pain, and injections, ointments, lotions, and so forth, may be applied as required.

If the base of the ulcer be grey and hard, if the sphincter be hypertrophied and spasmodically contracted, or if there be a polypoid growth or any other complication, the fissure can be cured only by the removal of such growths and the adoption of means that will prevent action of the muscle.

In some cases the *operative measures* needed are but mild. It may be enough to make a very superficial incision through the base of the fissure, so as to divide the fibres of the muscle immediately below the ulcer, or even to cut through an inflamed filament of nerve. But usually speaking the sphincter requires division. The divided fibres then retract, and do not unite so quickly as the ulcer heals ; hence the muscle is set at rest, and loses its hypertrophy and irritability. There is no necessity to cut through both sphincters, but it is better to cut rather deeply than to make an imperfect division of the muscles, which may prove to be a failure. The whole sore should be cut through, beginning above the upper end of the fissure and finishing beyond the outer end, the depth of the incision as a rule being not less than a quarter of an inch. Any inflamed skin at the outer end of the fissure, or a polypoid growth, should be removed with scissors. For a multiple fissure (which is not uncommon) one incision through the sphincter is sufficient. After the operation the patient must be left in bed till the wound is soundly healed.

Another mode of operative treatment is forcible dilatation of the sphincter. An anæsthetic is imperatively needed, for the method is a very painful one.

Subcutaneous division of the sphincter has been employed, but it has very uncertain results.

Incision is best for all ulcers situated about the internal sphincter, and for old, large, or indurated fissures about the external sphincter. It is likewise the best when the case is complicated with piles or fistulæ.

Forcible dilatation is advantageous for simple fissures about the verge of the anus, over the external sphincter. It is safest to employ for the old, the phthisical, and the feeble ; it may be used for children with congenital narrowness of the anus. When the case is complicated by the presence of a polypus, or a polypoid growth, the fissure may be cured by dilatation after the other ailments have been dealt with.

REFERENCE.—Allingham, "Diseases of the Rectum," 1888.

RECTUM (Fistula in Ano).

Nothing worthy of notice has appeared since our last issue. For treatment of this disorder see "Medical Annual," 1890-91.

RECTUM (Procidentia Recti). *Herbert W. Allingham, F.R.C.S.*

The general treatment of this condition was fully considered in the "Medical Annual" for 1891, p. 418.

Mr. Cripps[1] has published a long paper on complete prolapse of the rectum, but his article does not contain anything new, and its main feature is its praise of Van Buren's method of cauterization, which we have previously recommended.

Dr. James Bell[2], of Montreal, has performed an operation for complete prolapse after the plan advocated by Dr. John B. Roberts, of Philadelphia. The following is the important part of his report of the case: "The bowels having been thoroughly evacuated, the patient was anæsthetized, and a V-shaped piece was removed, having its apex at the point of the coccyx, and its face consisting of the posterior part of the sphincter ani, from an inch and a half to two inches in length. Another V was then removed from the posterior part of the rectum, throughout its whole thickness, having for its base the same portion of the sphincter, and its apex about four inches up the bowel. The bleeding was free, but not troublesome nor alarming. The wound in the bowel was closed by interrupted sutures of fine silk, tied within the bowel. The separated ends of the sphincter were brought together by two strong silk sutures, and another was inserted just below it. A drainage tube was introduced at the point of the coccyx, and carried up behind the line of suture in the rectum.

REFERENCES.—[1]"Lancet," Oct. 11, 1890; [2]"Ann. of Surg.," May, 1891.

Synopsis.—(Vol. 1891, p. 419.) For procidentia in children, application of strong **Nitric Acid**. Injections of carbolic acid and other irritants are not very advisable. Removal by écraseur. Application of **Hot Iron** or **Paquelin Cautery** is the best operation.

RECTUM (Stricture of). *Herbert W. Allingham, F.R.C.S.*

Stricture of the rectum may occur with or without ulceration, though it is more usual to find the two maladies combined.

Stricture together with ulceration mainly arises from tuberculosis, dysentery, or syphilis.

Simple stricture may be caused by inflammation of the submucous tissue, which itself may proceed from straining and a consequent intussusception, which places the affected part within the reach of the sphincter muscles. The pressure of the child's head during labour, or of any hard tumours, may sometimes account for the formation of

a stricture. There is reason to doubt whether muscular spasm alone is an efficient cause. What may be called congenital stricture is sometimes found in young people, who probably have just escaped having a congenital imperforate anus. In one form there is a narrowness of the lower part of the rectum for some inches, at other times the stricture takes the shape of a semi-circular or annular band.

Besides the usual straining and difficulty of the action of the bowels, the characteristic symptom of stricture is the passage of numerous, small, broken pieces of fæces, the discharge resembling the white of an unboiled egg. Pain is rarely felt in the bowel itself, and is generally referred to more or less distant parts.

Dilatation with bougies, which are gradually increased in size, is as a rule the best mode of treating simple strictures, but it is important that this dilatation should be gentle. If much force be applied, instead of the stricture being permanently benefited, it is not unlikely that ulceration will be caused.

When strictures are slight, near the anus, and not very long but annular, they may be *divided* with the knife in a few places. The induration should be cut through, but the incision should not be deeper than the healthy tissues beneath. It is annular strictures that more commonly require division, for they are so resilient that even after having been dilated to their full extent they soon contract again. It is wise to add that dilatation should be commenced on the day after the making of the superficial incision.

When ulceration of the rectum has existed for some time and become deep, stricture will probably result. **Bougies** should then be used, as in cases of simple stricture; but they should never be too large, and should be introduced gently, for above all things irritation is to be avoided.

If the stricture and ulceration (often combined with fistula) is serious, it is frequently necessary to employ *linear rectotomy*, as first practised by Verneuil. The knife should be used, not the écraseur and galvanic cautery. The whole stricture must be divided from its upper edge down to the coccyx, and through its entire depth. The essential point is that all the coats of the bowel, whether sound or not, including the sphincters, must be divided from the upper level of the stricture downwards. A deep drain is thus made, which allows discharges to run away.

In very severe cases of stricture with ulceration, colotomy has to be performed. Another article will show the special advantages of the inguinal operation.

M. Quenu, a French surgeon, advocates extirpation of syphilitic strictures of the rectum. By a posterior median incision he has excised the lower extremity of the gut, together with the surrounding indurated tissues. When the stricture involves the anus and lower part of the rectum, he holds that the operation should be performed through the perinæum; if it is situated higher up, Kraské's sacral method might be used. It may be remarked that the method proposed by M. Quenu is only possible in isolated cases; further, the contraction ensuing on the excision tells greatly against the operation.

REFERENCES.—"Bulletin de la Sociétié de Chirurgie de Paris," No. 3, 1891; Allingham, "Diseases of the Rectum," 1888.

RENAL CALCULUS. (See also "Bladder.")

Synopsis.—(Vol. 1891, p. 426.) Murray advises **Belladonna** in preference to opium, pushing the drug to its toxical stage, beginning with 40 minims of tincture, and repeating every two hours, according to intensity of pain. Infusion of **Armeria Vulgaris**, 10 parts to 200, claimed to aid in solution of renal calculi (p. 12).

RETINA (Detached).

Synopsis.—(Vol. 1890, p. 450.) Injection of 2 to 4 drops **Tincture of Iodine** into the vitreous cavity, followed by **Atropine** and **Cold Compresses.** To procure absorption of ensuing vitreous opacities, Scholer injected **Biniodide of Mercury**, 1% solution, and **Potassium Iodide**, 10%, into the muscles of the back, preceded by an injection of **Morphia.**

RHEUMATISM. *Henry Dwight Chapin, M.D., New York.*

Dr. B. B. Dalton believes that rheumatism may be caused by breathing air contaminated by the evacuations from sewers and drains.

The probable bacterial nature of rheumatism brings it into relationship with other diseases due to micro-organisms, and renders clear the following points of likeness: (1,) Its tendency, if untreated, to run a quite definite course, lasting about six weeks in adults and two weeks or less in children; (2,) A tendency to relapse, as seen in typhoid, and to a less extent in scarlatina and diphtheria; (3,) The hyperpyrexia, which, occurring most frequently in rheumatism, occurs also in typhoid and septic peritonitis; (4,) The affection of the same parts in rheumatism and pyæmia and the sweats common to each; (5,) The greater incidence of the disease on the young, and the comparative immunity of the old, in this resembling all the other members of the group; (6,) Its greatest prevalence at certain seasons; (7,) A marked hereditary tendency as with tuberculosis; (8,) Liability to repeated attacks, in this respect resembling most erysipelas.

Recognition of the bacterial nature of the disease throws light on the influence of these drugs which have been found most useful, namely, **Iodine, Quinine,** and **Salicylates.** That the poison is a special

one renders it possible that the disease should co-exist with others ; that it may enter the system by the inhalation of sewer-gas renders probable its co-existence with others that may be contracted in the same way. Sewer-gas is a variable mixture, containing numerous kinds of disease-producing germs, which leads to results varying according to the soil it meets with and the relative proportion of the organisms present. The author holds, therefore, that rheumatism is an addition and not a part of the disease with which it occurs. If two poisons are absorbed at once, the one having the shorter incubation develops first, hence rheumatism follows tonsillitis.

REFERENCE.—"Brit. Med. Journ.," March 1, 1890.

RHEUMATISM (Acute). *Frank J. Wethered, M.D.*

"The Causation of Acute Rheumatism" is the title of an interesting and valuable paper by Dr. A. Haig in the "Practitioner" for Feb., 1891. After a careful analysis of the work done by Sir Alfred Garrod, Dr. A. Garrod', and others, the author arrives at the following conclusions :—

(1,) That any diminution of the alkalinity of the blood and tissue fluids in a given region of the body causes the uric acid coming to it in the blood to become "less soluble and more easily retained," in other words, causes it to remain in the fluids of the less alkaline region instead of passing on in the circulating blood. The blood thus becomes poorer, and the region of diminished alkalinity richer, in uric acid or biurate.

(2,) According to Sir A. Garrod, certain organs and tissues, as the liver, spleen, and the cartilages and fibrous tissues of joints, are normally less alkaline than the other tissues of the body and their fluids : hence in any general diminution of alkalinity, these tissues will be most affected, and the circulating uric acid will first of all be rendered insoluble or retained in them.

(3,) It follows from what has been said, that the uric acid or biurate, thus concentrated or precipitated in certain tissues, gives rise to irritation going on to inflammation, which is roughly proportional to the amount of uric acid concentrated in any given spot, and the time during which it can act upon the tissues.

If these premises be granted it becomes an easy and simple matter to explain a large part of the symptoms and pathology of rheumatism. To take an instance : a piece of fibrous tissue in a joint becomes irritated from some cause ; there is at once slight local inflammation, which produces a local lowering of alkalinity, and all uric acid coming that way in the blood stream is rendered insoluble and retained. More uric acid may be added, or by suitable treatment with alkalies the uric

acid is got into solution, and everything quiets down. If, however, the process is allowed to continue, the result may be very different; the fibrous tissue recovers more slowly, and what may be looked upon as a scar results: possibly before long this is again irritated by slight injury, its alkalinity is again diminished, and uric acid is again precipitated into it; the whole process of irritation is again gone through, leaving the injured area greater and more disposed to suffer from further repetitions of the process.

In this way what was at first a mere microscopic speck of irritated fibrous tissue becomes a large and important lesion of fibrous structure, which we call chronic arthritis, periostitis, etc., according to its position and the structures involved.

Accepting this causation to be correct, the indications for treatment are simple and obvious, namely: (1,) To remove the uric acid by means of solvents from the irritated region; (2,) To prevent as far as possible its return or reprecipitation there; (3,) To take care of the irritated fibrous tissue, and guard it from injury or cold or other causes which would diminish its alkalinity and again precipitate the uric acid into it; (4,) Having got the uric acid out and done what is necessary to keep it out, we must give such drugs as **Arsenic, Iron,** and **Cod-liver Oil,** perhaps the **Iodides,** to improve the general nutrition and aid the restoration of the injured fibrous structures.

Dr. Bordas[2] has given in "La Médecine Moderne" the results of some of his researches in acute articular rheumatism, which in his opinion tended to show that the cause of that disease is a pathogenic micro-organism specific in character.

Observers have at different times drawn attention to the fact that the phenomena of acute pleurisy and acute rheumatism are very similar, and the success which has been attained by treating the two conditions with the salicylates would tend to support this theory.

TREATMENT.—In the "Med. Press and Cir." for June 17, 1891, Mr. A. L. Gillespie[3] speaks in high terms of the treatment of acute articular rheumatism by **Hypodermic Injections of Carbolic Acid;** 2 to 5 minims of a 10 per cent solution of carbolic acid were injected into the joint cavity, with the result that the pain was speedily relieved. This procedure seems to merit some attention, for though it might appear somewhat heroic to inject into or close to acutely-inflamed joints a strong solution of carbolic acid, yet the relief afforded was so great and welcome that the patients often begged for a repetition of the injection when another joint became painful. The short time that elapses between the injection and the cessation of pain, only half a minute in one case, the rapid return of freedom of movement, and the

ease and ability to sleep thereby afforded, warrant our using it in many cases. It is of especial value in cases of gonorrhœal rheumatism, in which no good has arisen from the use of salicylates, but does not seem to act so well when many of the joints are affected.

In the "Répertoire de Pharmacie" **Salol Collodion** is recommended as an efficient application to the affected parts in acute rheumatism, the relief of pain being rapid. The preparation is made by dissolving 4 parts of salol in 4 parts of ether, and then adding 30 parts of collodion.

Dr. C. C. P. Clark recommends the old treatment of **Tincture of Cinchona,** in ½ ounce doses every four hours, and has found this treatment succeed when all others failed.

With regard to the treatment of rheumatic hyper-pyrexia, Dr. H. C. Male, after fully discussing the various treatments which have been suggested for the treatment of this very dangerous complication, comes to the conclusion that the safest and most satisfactory method is the application of cold to the surfaces of the body. This may be done either by means of the **Bath** or the **Cold Pack.**

When the *bath* is used, it is recommended that the patient be lowered into it in a sheet, at a temperature of 90°—100° F., and that it be cooled down by adding cold water, or preferably pieces of ice, till it is reduced to 60° or 70°.

He should remain in the bath till the thermometer, placed in the rectum, has fallen to 101°--102°, unless any symptom of faintness or shivering required it to be discontinued earlier. In many cases the patient's temperature continues to fall after his removal from the bath. He must be rubbed dry, and placed in bed lightly covered with blankets; if the temperature fall too low, or the patient is shivering, hot bottles and stimulants are required.

The *cold pack* is best applied in the following way: The patient remains in his bed; he is stripped of all clothing and a mackintosh is placed under h'm. Towels are wrung out of iced water and applied to the trunk, head, and limbs. These are changed frequently, and the body sponged over with lumps of ice. An ice-bag should also be applied along the whole length of the spine. The temperature must be carefully watched as before, and the pack discontinued when its reduction has been effected.

The *choice of method* to be employed must depend on the circumstances of the case.

In some cases one bathing is sufficient to effect reduction of temperature, no further excessive rise taking place. In others it has to be repeated, and it has been used as often as twenty-six

times on the same patient with ultimate success. The various visceral lesions, such as pericarditis and pneumonia, so common in acute rheumatism, are no contra-indications to the use of cold.

REFERENCES.—[1]"Practitioner," Dec., 1890, Feb., March, and May, 1891; [2]"New York Med. Jour.," Feb. 14, 1891; [3]"Therap. Gaz.," Dec., 1890, Aug., 1891.

Synopsis.—(Vol. 1891, p. 427.) **Phenacetin**, gr. 45 daily, taken in divided doses at intervals of three hours; increased gr. 15 daily until pain is relieved. **Pilocarpine** relieves to some extent the less intense form of connective tissue contraction in chronic articular rheumatism. **Oil of Winter Green** applied locally for relief of pain in chronic cases.

Hydracetin, 10 centigrammes given in two doses of 5 centigrammes daily in articular rheumatism—it must be cautiously used (p. 31). **Methylene Blue**, gr. 1½ to 4 internally, gr. 1 hypodermically for rheumatism of muscles, tendons and joints. **Phenyl Urethan**, gr. 2 to 7½, in acute articular rheumatism (p. 45). Tincture of **Rhus Toxicodendron**, gtt. 1 to 5, for chronic rheumatic conditions of tendons, ligaments and muscle sheaths, the pains being worse when the parts are at rest, but after slight exercise are relieved.

RHINITIS (Atrophic). *Greville MacDonald, M.D.*

In passing in review the contributions to this subject during the past year one feels compelled to reiterate the cardinal law in the treatment of cases of ozæna, expressed at length in the "Annual" for 1890 (p. 389), to the effect that importance lies not so much in the remedy used as the method of application. Careful cleansing by a skilled hand will do more in a week than months of treatment conducted by a nurse or mother. Dr. de H. Hall recommends, after washing, the anointing of the interior of the nose with vaseline containing eucalyptus oil in the proportion of a drachm to the ounce. Mr. Spencer Watson[1] mentions a case which recovered after accidental infection with gonorrhœal virus. Dr. Phillips[2] recommends the application of a 5 per cent. solution of ichthyol in keroline, claiming that the improvement is manifested after the second application. Recently, further researches into the bacteriological nature of ozæna have been made by Marano[3], at Naples, and by Pasquale[4].

REFERENCES.—[1]"Brit. Med. Journ.," April 10, 1891; [2]"New York Med. Record," May 16, 1891; [3]"Med. Record," Nov., 1890; [4]"Giornale Internatz. delle Scienze Med.," Aug. 15, 1890.

Synopsis.—(Vol. 1891, p. 431.) In chronic cases where respiration is profound through the mouth, Goodwillie's **Rubber Tubes** for intubation are recommended if surgical measures are not allowed. Seiler advises washing the nose with alkalies and applying solution of **Iodine** in **Glycerine** for inflamed mucosa. Moure recommends for ozæna free ablution of the nose with warm **Alkaline Douches** and then **Carbolic Lotion**; after odour has disappeared, **Chloral**, **Resorcin**, **Salicylic Acid** or **Creolin** may be used. **Condy** or **Sanitas** will suffice if ablution be thorough. For croupous rhinitis,

Hot Fomentations to nose and eyes and irrigations with weak solutions of Borax.

Aristol as dusting powder in rhinitis with dryness of the mucous surface (p. 11).

RHINOSCOPY (Anterior). *Greville MacDonald, M.D.*

Before attempting the diagnosis of any disease of the nose it is necessary that the surgeon should be familiar with the methods of examination, the apparatus employed, and the structures thereby exposed. It is the more important to give such points in some detail, seeing that some otherwise trustworthy text-books give but imperfect, and sometimes even erroneous accounts. Indeed, probably, no class of speculum examination needs so much practice before it can be satisfactorily accomplished. In the following descriptions note will be taken of only the normal appearances.

The apparatus required for anterior rhinoscopy is simple enough, and is most of it in the hands of every practitioner able to use the laryngoscope. Either direct sunlight, or good lamplight reflected from the forehead, will suffice. The best lamp where gas is available, is the Welsbach incandescent, as the light is whiter and cooler than that of the ordinary Argand burner. It can be fitted to Mackenzie's lever-bracket arrangement, or may slide on a vertical rod, according to preference. Good oil-lamps are made for the purpose by all instrument makers, but an iron chimney, whitened on the inside, and a bull's-eye are desirable. The electric incandescent light may be used either with Leiter's or Trouvé's forehead apparatus, or by a fifty-candle lamp attached to a bracket, and reflected from the forehead. It is well to remember that efficient illumination is of more importance in rhinoscopy than in the examination of either larynx or ear. A few specula, a few probes, one or two small laryngeal mirrors and a tongue-depressor, with one or two palate-hooks, will complete the instruments needed for an ordinary examination. The form of speculum is of some

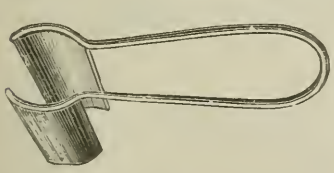


Fig. 27.

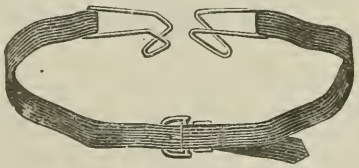


Fig. 28.

importance, especially as those with fenestrated blades permit the vibrissæ in the vestibule to obstruct the view. Thudichum's (*Fig.* 27) instrument in two or three sizes serves all purposes, and is sufficiently self-retaining. Cresswell Baber's (*Fig.* 28) with a band passing over

the head, is sometimes useful, if made with solid instead of fenestrated blades. Fräenkel's (*Fig.* 29) the most frequently employed, has the disadvantage of fenestration. Duplay's (*Fig.* 30) is probably the most comfortable of all for the patient, though it is somewhat awkward for the manipulator. The probes should be fairly stout and long, having no bulbous enlargement at the extremity ; they are frequently required for carrying a mop of cotton wool for purposes of cleansing, which, if the extremity be bulbous, is very difficult to remove. Of the mirrors, one should be bent at a right angle to the stem, the other at the angle employed for laryngeal purposes, viz., about 120°. The best tongue depressor is Fräenkel's made an inch longer than usual. This is specially convenient when the patient is required to depress the tongue himself. Rarely a palate-hook is of service ; but so much sphincter-like contraction of the palate and constrictors of the pharynx is produced by its insertion that it seldom proves of much practical utility, besides causing very great discomfort to the patient. The beginner in these modes of examination had best dispense with it altogether, while the skilled hand rarely needs it. Voltolini's (*Fig.* 31) is the most generally useful. It consists of a solid flat blade, with two flanges projecting upwards on each side immediately behind the angle, which prevent the uvula

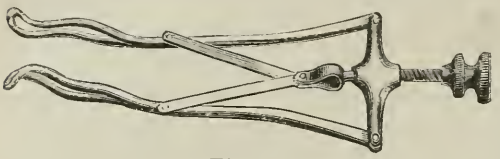


Fig. 29.

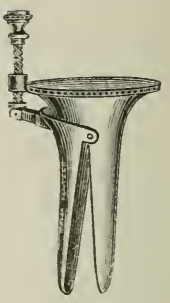


Fig. 30.

Fig. 31.

from falling into the field of vision. Another hook of some utility, especially where in operating upon post-nasal structures it is desirable to leave both hands free, is one designed by Dr. J. A. White, of Richmond, Va. (*Fig.* 32.) On the stem slides an attachment consisting of two flexible loops of wire, which, when the instrument is in position, lie against the upper lip, and retain the instrument. In applying, the hook is first placed behind the palate, and the patient directed to close his lips and breathe through the nose. This relaxes the velum

sufficiently to allow of its being drawn forwards. The lip-attachment is then pushed into position until it is firmly fixed against the superior maxilla on each side of the nose, the pressure preventing its slipping.

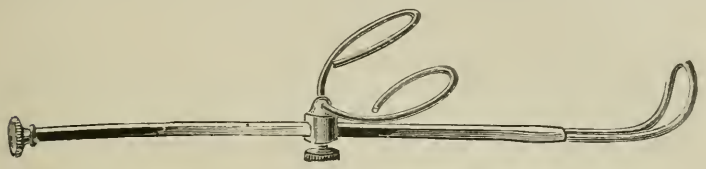


Fig. 32.

The manner of holding Thudichum's speculum is of some importance. With the blades directed towards the patient and the spring held upwards, the latter should be lightly grasped between the thumb and first fingers, the dorsum towards the forehead, while the second and third are extended on each side, so that the examiner can regulate the force of the spring. Held thus no patient will complain of pain—a charge commonly brought against the instrument. Inserted well between the alæ in this manner, and with the fourth finger resting on the bridge of the nose, we can easily alter the inclination of the speculum ; and by gentle pressure in one or other direction by the finger on the nose, we can change the position of the head as this becomes necessary—a requirement which will presently be recognized as as of considerable importance. We may now inquire what structures are thus exposed.

Presuming the head to be sufficiently tilted back to afford the best view, and the projecting vibrissæ held on one side by the blades of the speculum, we see for a greater or less distance into the nasal fossæ (*Plate IV., Fig. A*). In the lower part standing out from the external wall, we observe the inferior turbinated body, a fold of mucous membrane covering the inferior spongy bone, and including the plexiform arrangement of venous sinuses, to which the erectile property of the structure is due. This erectile tissue not only extends along the free border of the turbinated body but also lines the floor and a portion of the septum. According to the degree of turgidity we can see to a greater or less distance along the inferior meatus ; but frequently the swelling is so great, although scarcely to be considered pathological, that the channel is completely blocked. Thus after exposure to cold air, or during an attack of acute coryza, the inferior turbinated body becomes greatly swollen, and darker in colour than the usually bright red of its mucous membrane. Yet although one may be in some doubt as to

whether such swelling should be considered pathological, it frequently comes under observation as a form of nasal obstruction, and as such requires definite treatment. (See "Medical Annual," 1891, article "Rhinitis.") If we investigate with a probe the nature of a swollen inferior turbinated body we find that it gives the impression of a sac loosely filled with fluid. In fact it fluctuates; and on a first examination one can hardly be persuaded that it does not contain fluid other than the blood of its erectile tissue. But the application of a 5 per cent. solution of cocaine restores it in a few seconds to its collapsed condition, and the true nature of the tumefaction is revealed. Besides that on the inferior spongy bone and lining the inferior meatus, there is often another mass of erectile tissue on the septum, a little lower than opposite the anterior third of the middle turbinated bone. This is as liable as the inferior turbinated body to erection, although its smaller bulk renders it less conspicuous. According to the degree of prominence in the inferior turbinated body we see more or less of the free convex border of the middle spongy bone, between which and the septum there should be a clear passage, known as the olfactory fissure, which varies considerably in width even in conditions of health. Between the free margin of the middle turbinated, curved inwards on itself, and the outer wall of the nasal fossa, is a deep sulcus corresponding with the concavity of the spongy bone, so that the free margin appears to hang downwards from the roof. It must be observed that between the anterior extremity of the middle spongy bone and the nasal process of the upper jaw there is a free passage, which, however, is considerably narrower in the living subject than in the skeleton. In pathological conditions it may be obstructed.

That portion of the fossa which lies below the upper margin of the inferior spongy bone is commonly spoken of as the inferior meatus; into it, anteriorly, opens the naso-lachrymal canal. Between the concavity of the middle turbinated bone and the convexity of the inferior extends the middle meatus, into which open above and anteriorly, the anterior ethmoidal cells. On the outer wall, between two and three inches from the orifice of the alæ, is found the semi-lunar hiatus, lying between the upper margin of the unciform process and the projecting ethmoidal cell, which Zuckerkandl has named the *bulla ethmoidalis*. Upwards and forwards this crescentic and valvular opening leads into the infundibulum, and gives access to the frontal sinus; while running backwards, downwards and somewhat outwards, curving under the bulla, it leads into the *ostium maxillare*. There are occasionally other accessory openings into the antrum; while it must be noted that

the outer wall of the infundibulum is often separated from the cavity of the antrum by the two layers of mucous membrane alone. This point is of importance in relation to the flow of pus from the upper portions of the nose into the cavity of the jaw.

In the majority of individuals we find more or less deviation of the septum with the development of cartilaginous and osseous ridges running from before backwards. It is often difficult to determine at what point these malformations are to be considered pathological; and in this place it may be sufficient to state that the distinction depends rather upon collateral symptoms than upon the actual degree of deformity. There is almost always more or less thickening at the point where the curvature is sharpest. Sometimes we find the hypertrophy without deviation, in which case it may be symmetrical on both sides.

RHINOSCOPY (Posterior). *Greville MacDonald, M.D.*

Posterior rhinoscopy is more difficult than anterior, on account of the excessive reflex contraction of the soft palate evinced by most patients. But in cases of extreme difficulty the examiner may be consoled with the reflection that such excitability is generally met with when the post-nasal structures are in a state of health, and that on the contrary those affections most imperatively demanding a thorough inspection of the naso-pharyngeal chamber, are those in fact where the palate assumes a more or less perpendicular position and where the reflex action is reduced to a minimum. The examination is

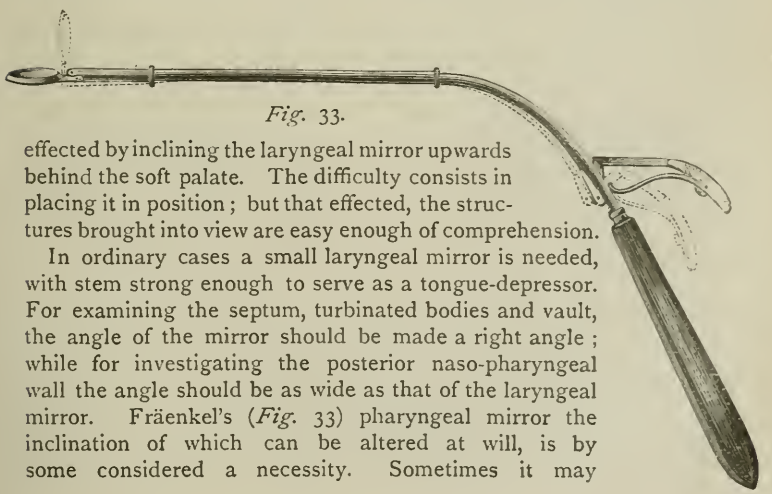


Fig. 33.

effected by inclining the laryngeal mirror upwards behind the soft palate. The difficulty consists in placing it in position; but that effected, the structures brought into view are easy enough of comprehension.

In ordinary cases a small laryngeal mirror is needed, with stem strong enough to serve as a tongue-depressor. For examining the septum, turbinated bodies and vault, the angle of the mirror should be made a right angle; while for investigating the posterior naso-pharyngeal wall the angle should be as wide as that of the laryngeal mirror. Fräenkel's (*Fig.* 33) pharyngeal mirror the inclination of which can be altered at will, is by some considered a necessity. Sometimes it may

be advantageous to use a tongue-depressor as well. In any case the mirror must be gently carried behind the uvula, without touching either it or the posterior wall of the pharynx. The advantage of dispensing with the tongue-depressor is that with the left hand one may steady the patent by holding his chin. But whatever plan is adopted, he must be persuaded that the examiner is master of the situation. Firmness and gentleness are at once required for this sometimes exceedingly difficult operation. Often one may induce sufficient relaxation of the velum by asking the patient to breathe through the nose, or by his taking slow deep breaths in and out of the mouth. Yet the longer one takes the more difficult does it become. Sometimes the application of a 5 or 10 per cent. solution of cocaine in conditions of great irritability may be advisable ; although only too often, in spite of the anæsthesia induced, it aggravates the tendency to reflex-action and retching. Very rarely is anything gained from the assistance of the palate-hook.

Having the angle of the mirror pressing on the back of the tongue, and the upper edge of the reflecting surface just below and well behind the margin of the pendulous palate, a view of the post-nasal structures is obtained ; a view, however, pieced together by a series of altered inclinations of the mirror (*Plate IV., Fig. B*). We see the two choanæ separated by the vertical, in this situation rarely deviated, septum. Into these project, downwards and inwards, the three, sometimes four, turbinated bodies with their intervening channels. The inferior meatus, owing to what is called the uvula-cushion, frequently appears as no more than a narrow slit ; while often the whole of the inferior turbinated body is hidden. The middle meatus is not infrequently contracted by congestion, œdema or hypertrophy of the erectile tissue covering the bone below (*Fig. C* and *D*) ; while the superior meatus may seem to possess an unwarranted importance, seeing that it is only fully developed posteriorly. Occasionally the sphenoidal sinuses are so much developed that they encroach upon the post-nasal space ; in which case the superior turbinated may be hidden from view, and even the attached border of the middle.

Externally to the choanæ we see the yellowish openings of the Eustachian tubes with the salpingo-palatine folds in front and the salpingo-pharyngeal folds behind. Externally to and behind this again is Rosenmuller's fossa into which the Eustachian catheter sometimes inadvertently passes. At the highest point of the cavity, a little posteriorly, may sometimes be distinguished the raised collection of lymphoid tissue described as Luschka's tonsil, in the centre of which a depression

may sometimes be seen. Running downwards on each side of this are not infrequently seen two parallel folds of mucous membrane, one on each side of the central raphe; but it is often impossible to say if, or at what point in its extent, it should be considered pathological.

The normal colour of the nasal and naso-pharyngeal mucous membrane is not very easy to determine in a large city, where nearly everyone suffers from more or less nasal catarrh. In front the darkest portion is the inferior turbinated body, the middle being much paler. Posteriorly the structures projecting into the choanæ should be of a pale grey, destitute of colour, and somewhat œdematous-looking (*Fig. B*). It is important to notice this point, as the text-books, when employing chromo-lithographic plates, invariably give these structures a paler or deeper rose-colour. The mucous membrane of the naso-pharynx generally may be described as a pinkish-grey, becoming darker in colour as the pharynx is approached.

RICKETS. *Henry Dwight Chapin, M.D., New York.*

Dr. Mettenheimér considers that the value of **Phosphorus** in the treatment of rachitis may have been over-estimated. In the severer forms of the disease, this treatment is almost impossible, on account of catarrhal and inflammatory troubles which usually co-exist. Among the various preparations which have been made may be mentioned a phosphorous water, a solution of phosphorus in bisulphide of carbon, another in hot spirits of wine, a mixture with liquid vaseline, and a combination with zinc. There are objections to all of them, partly because they quickly disagree with children, partly because the quantity of phosphorus which they contain is very uncertain, partly because they have not been sufficiently tried. A preparation which gave the best results as far as toleration by the stomach is concerned, was the following :—

℞ Phosphori ·01 gramme | Spt. Æther Sulph. 14 grammes
Ol. Menth. Pip. Æther 1 gramme |

Sig.—One drop daily in syrup, sweetened water, or milk, to be increased if possible.

REFERENCE. — " Jahrb. für Kinderh., xxxii. 3.

Frank J. Wethered, M.D.

An important communication has been published by Dr. Theobald A. Palm', of Wigton, on the geographical distribution and etiology of rickets.

By a process of exclusion he arrives at the conclusion that the conditions of the production of rickets are narrowed down to those climatic conditions which are exaggerated in town-life and especially among the poor.

It is in the narrow alleys, the haunts and play-grounds of the children of the poor, that exclusion of sunlight is at its worst, and it is there that the victims of rickets are to be found in abundance. Another reason why the poor suffer more than the rich, is because they cannot afford to send their children out in the air and sunshine. The mothers are taken up with household work, and themselves suffer from the same cause.

He advocates the education of the public to the appreciation of sunshine as a means of health. Let people understand that sun-light in the dwelling not only reveals unsuspected dirt, but is nature's universal disinfectant, as well as a stimulant and tonic. Such knowledge will also stimulate efforts for the abatement of smoke, and for the multiplication of open spaces, especially as play-grounds for the children of the poor.

Kassowitz[2] has also advanced our knowledge of rickets, and of its therapeutics. According to him the chief characteristic of rachitis is an abnormal hyperæmia and an excessive formation of blood-vessels in the tissues forming the bones, and that all the other symptoms are the direct or indirect consequences of the anomaly of the vessels. He states that a cure is always accompanied by a diminution of the hyperæmia of the bones, caused by an involution of the newly-formed blood-vessels.

TREATMENT.—The experiments of Wequer show that small doses of phosphorus exercise a very marked consolidating influence on new deposits of bone. This suggested to Kassowitz to try phosphorus in small doses in rickets. The result surpassed anything he could have hoped; nearly all cases thus treated exhibited marked and rapid improvement.

Dr. Voute gives the results of his experience during nearly ten months of this treatment. It was highly successful, improvement being marked in 63 per cent. of the cases.

The drug was given in cod-liver oil as follows: Phosphorus, 1 centigr.; Ol. morrhuæ, 100 grammes; a teaspoonful being given either once daily, or in divided doses, morning and evening.

REFERENCES. — [1] "Practitioner," Oct., 1890; "New York Med. Jour.," March 14, 1891; Supplement to "Brit. Med. Jour.," July 4, 1891; [2] "Lond. Med. Rec.," May 20, 1891.

Synopsis.—(Vol. 1891, p. 416.) ℞ Phosphori 0·01; Oliveñol 10 0, Gummi Arabic, Syr. Simp. āā 5·0; Aq. Dest. 80·0, M. Sig. A teaspoonful daily. ℞ Phosphori, gr. 1; Alcohol Absolut. ♏150; Spt. Menth. Pip. ♏10; Glyc. ℥ij, M. Sig. For a child two to four years of age, 6 minims t.i.d., increased 1 minim weekly until 10 minims are given. **Iron** and small doses of **Nux Vomica** for rachitic anæmia. **Cod Liver Oil** should be given unmixed.

Locally **Massage** and **Electricity** are of service. Kassowitz combines **Phosphorus** with **Cod Liver Oil**, giving a coffeespoonful of oil daily, containing half a milligramme of **Phosphorus**, or **Lipanine** may be substituted for the oil, *e.g.*, ℞ Phosphori grm. 0·01 ; Lipanine grm. 30; Sac. Alb., Gum Arabic Pulv. āā grm. 15; Aq. Dest. grm. 40 ; M. Sig. A coffeespoonful daily. **Lipanine** may be used alone. ℞ Lipanine grm. 10; Syr. Menth. Pip. grm 50, M. Sig. A small spoonful three times daily. Use of **Compressed Air.**

RODENT ULCER. *T. Colcott Fox, M.B.*

Boeck and Unna have obtained unusually good results by treating rodent ulcer with **Unna's Resorcin Plaster,** changed daily.

REFERENCE.—"Monats. f. prakt. Derm.," No. 4, Feb. 1891.

SABURRAL FEVERS. *Frank J. Wethered, M.D.*

Talamon has called attention to the exceeding prevalence of fevers of a continuous, or remittent type, due simply to morbid conditions of the stomach. The product of vicious fermentations, or, what is perhaps more probable, poisonous ptomaïnes of microbic origin generated in the alimentary canal being absorbed into the blood in a more or less intermittent manner, acting on the thermogenetic and other nervous centres, and causing symptoms of a very pronounced though seldom dangerous character. The old writers gave to this pyrexial disease the name of "saburral fever," indicating by the epithet *saburral* that they believed it due to foulness of the stomach—*i.e.*, an accumulation of saburræ in that organ. The French names, *embarras gastrique*, *état saburral* are synonymous.

The symptoms are subordinate to the gastro-intestinal derangement. The disease begins with loss of appetite (which may be gradual); the tongue is large, white, and dirty; the mouth clammy; the breath fœtid ; constipation is habitual ; the patient is languid, feeble, and has no aptitude for work ; the discomfort augments after each attempt to take food ; then febrile paroxysms, preceded by chills and followed by sweating, set in. Sometimes hepatic symptoms, such as jaundice and enlargement of the liver, are present. All the morbid phenomena improve under the judicious use of saline purgatives frequently repeated. Under the influence of overwork, emotion, exposure to cold, etc., there is arrest of digestion ; nausea and vomiting, headache, chills, and fever supervene. The supposition of putrid fermentations in the stomach and intestines, and the absorption of the abnormal products of digestion, with poisonous ptomaïnes elaborated by microbes, will explain the symptoms better than any other hypothesis.

The duration of the disease is variable ; it may last with a nearly continued fever for a week, or even longer, resembling a mild typhoid.

In other cases, after one or more attacks of chills followed by fever, profuse evacuation—the result of medicine, or supervening spontaneously—may set in, and convalescence may rapidly take place.

The treatment should be such as is calculated to promote thorough cleansing and antisepsis of the alimentary canal. There can be little doubt as to the propriety of an emetic of ipecac. at the onset. This may be followed by a "c. cum. j." purge, or by 3 of the **Pil. Catharticæ Co.**, a full dose of Hunyadi or Rubinat water being given the next day. In no disease is the efficacy of judicious purging more conspicuous. There is generally constipation from the first; even when there is diarrhœa, the natural evacuations may be insufficient, without the aid of daily saline cathartics, to clear the alimentary canal of offending products.

There can, moreover, be no doubt as to the utility of disinfecting the digestive tube by the administration in suitable doses of such antiseptics as naphthol, naphthalin, salol, salicylate of sodium or bismuth, charcoal, etc.; the diet should be light and bland, consisting principally of milk-and-water gruel.

REFERENCE.—"Therap. Gaz.," Feb. 16, 1891.

SACRO-ILIAC DISEASE. (See "Orthopædics.")

SCABIES. *T. Colcott Fox, M.B.*

Barendt gives the following treatment as that pursued at Vienna. The favourite sites of the acarus are thoroughly inuncted for three minutes each with 10 to 15 per cent. of **β Naphthol Ointment,** and then the whole body is well rubbed. The patient is well dusted over and kept in woollen wraps till the epidermis begins to desquamate about the third day. Then, unless excessive eczema is present, a warm bath is taken with plenty of green soap, and the cure is complete. The patients are utilized to rub one another.

Lollis asserts that a 5 per cent. **Vaseline Ointment of Creolin** cures in four rubbings without setting up eczema or producing staining. The well-known rapid cure of the Hôpital St. Louis is as follows: The patient is stripped and scrubbed from twenty to thirty minutes, with black soap and warm water. This is followed by a warm bath lasting for thirty to sixty minutes, and more soaping in order to cleanse and soften the skin, remove eggs, larvæ and full-grown acari, and expose the runs. Lastly for twenty minutes a sulphur ointment is rubbed in (Flower of Sulphur 2 parts, Carbonate of Potash 1 part, Lard 12 parts). This ointment must also be kept applied to the skin for at least twenty-four hours. Then a starch bath is given and bland emollient applied, till all irritation has ceased. Meanwhile all clothes have been thoroughly disinfected.

REFERENCE.—Lollis, "Internat. klin. Rundschau," Nov. 16, 1890.

Synopsis.—(Vol. 1891, p. 434.) Dry dusting of body and bedclothes with Sulphur, thus avoiding eczema and dermatitis, and Oil of Sweet Almonds may be applied before the dusting.

SCARLATINA. *Henry Dwight Chapin, M.D., New York.*

Dr. J. Lewis Smith discusses the preventive treatment of scarlatina. Disinfection of room as follows :—

℞ Acidi Carbolici Ol. Eucalypti	āā ℥j	Spts. Terebinth.	℥vj

Misce.

Two tablespoonfuls are added to a quart of water in a tin wash-basin or similar vessel with broad surface, and maintained in a state of constant simmering over a gas or oil stove. The odour of this vapour is agreeable rather than unpleasant, and it appears to disinfect, to a considerable extent, the breath and exhalations from the body of the patient. At the same time inunction is prescribed of the entire surface every three hours with the following :—

℞ Acidi Carbolici Ol. Eucalypti	āā ℥j	Ol. Olivæ	℥vij

Misce.

As a local disinfectant to to the faucial surface corrosive sublimate, 2 grains to the pint of water is used. 1 dram contains $\frac{1}{64}$th of a grain. It may be used as a gargle, or as a spray from a hard rubber atomizer. The same solution may be employed for the Schneiderian surface, if it be red, swollen, and attended by a discharge. The rubbing of the walls of the infected apartment with slices of fresh bread, which gather up microbes, and especially white-washing, or calcining or washing of the ceiling, walls, and floor, with a solution of corrosive sublimate, should be insisted on before the apartment is again occupied.

REFERENCE.—"Archiv. Pedi.," December, 1890.

Frank J. Wethered, M.D.

Some useful hints are given as regards the prophylaxis of scarlet fever by Dr. Severstre[1] in "Le Progrès Médical," March 7, 1891.

Antisepsis must be carried out with minute scrupulousness and thoroughness. Nurses, doctors, and attendants should wear special clothing, or, at least, a blouse that they can throw off on leaving the sick-rooms. Frequent antiseptic washings of hands and face are necessary. The patient must be antiseptically treated with a view of destroying all the germs ; linen must not leave the room except to be subjected to boiling ; the commodes, etc., must be disinfected. The skin and the throat must receive particular attention ; for the mouth

and pharynx, frequent washing or painting with antiseptic solutions to destroy germs that are expelled from the body. Antiseptic ointment should be rubbed into the skin to facilitate desquamation, which hinders the dead skin from flying about. The functions of the skin are not hindered by the ointment; on the contrary, Jamieson asserts that this treatment is otherwise advantageous (*e.g.*, protection from chills).

These unctions must be specially administered during the few days preceding the patient's return to every-day life. There also must be ordered antiseptic baths, with sublimate, if possible, or, at any rate, with coal-tar soap. Even a rubbing-down with a sponge dipped in a solution is a good substitute for the bath. Particular attention is to be paid to the scalp and other hairy parts, which are frequently neglected. In the last week, washing, unction, and baths must alternate, a bath being the last thing; from which the patient, clad in disinfected clothing, must on no account be allowed to return to the sick-room. His other clothing he does not get until it has been properly disinfected.

The treatment of scarlet fever has received but few additions during the past year. Dr. Bezley Thorne[2] records a case which is worth mentioning, as the results, both as regards treatment and prevention of the spread of the disease, were most satisfactory.

The patient was ordered to take internally, every four hours, 5 minims of the **Oil of Eucalyptus Globulus** emulsified with **Powdered Acacia**; to use every hour a gargle of **Carbolic** and **Tannic Acids** suitably diluted; to undergo daily inunction with an emulsion of eucalyptus oil of the strength of ½ a drachm to the ounce, and made up with glycerine, to promote adhesion to the skin; and to have the scalp and hair daily sprinkled with a spirit lotion containing eucalyptol, with a small quantity of almond oil. "On the following morning—that is, in rather more than twelve hours—I found that the rash had receded from the face. I inquired of the nurse whether any was to be seen on the chest, which she had washed and anointed two hours previously, and was informed that it was "well out," but on examining that region found that it presented absolutely none. It was at that time making its appearance on the lower extremities, was well marked in the evening, and on the following morning had entirely disappeared. No desquamation followed. The chart tells the rest with sufficient detail. It should be added that although the house was occupied during the illness and up to the departure of the patient to the seaside on the twenty-second day by six full-grown adults and four younger persons whose ages range from nineteen to six, besides the sick one, the infec-

tion has not spread. A sheet, which was from time to time moistened with a dilution of **Sanitas**, was fixed by the nurse to the door of the sick room, in accordance with the instructions of the institution from which she was sent."

Large doses of **Acetate of Ammonium** are recommended by Vidal[3] in the "Wiener med. Presse," in the treatment of scarlatina; and he believes that its employment will be found useful in the treatment of other exanthemata. He gave the drug to three children suffering from scarlatina in daily quantities of from 35 to 90 grains. The temperature fell rapidly, and desquamation was established within four days. The earlier in the course of the disease the drug is administered the better are the results obtained.

For the treatment of ulcerated sore throat in scarlet fever Dr. N. S. Manning[4] recommends **Boric Acid** dissolved in hot water (105° F.). In order to facilitate the solution of the boric acid a saturated solution in glycerine is used, of which the following are the proportions: Pulv. acid. boric., 4 parts; glycerine (sp. gr. 1260), 3 parts. The glycerine should be heated by steam, and the boric acid—best quality carefully powdered—stirred in till the solution is perfect. Of this solution a large tablespoonful is dissolved in about a pint of hot water.

REFERENCES.—[1]"Lond. Med. Rec.," April 20, 1891; [2]"Brit. Med. Journ.," May 2, 1891; [3]"Pract.," June, 1891; [4]"Lancet," May 2, 1891.

Synopsis.—(Vol. 1890, p. 459.) **Mercuric Iodide.** ℞ Liq. Hyd. Perchlor. ℥j, Potass. Iodid. ℥ss, Syr. Simp. ad. ℥viij, M.; ℥ss every one, two, or three hours. Sponge skin with **Corrosive Sublimate Solution**, 1 in 4000, as soon as the eruption appears, and wash the hair with the same lotion, and also a solution of **Borax**, 1 in 250; disinfect urine, fæces, and expectoration, as well as discharge from nose and ears, if present, by **Corrosive Sublimate Solution**, 1 in 1000. When patient is allowed to get up, sponge skin with **Corrosive Sublimate Solution**, wiping it dry and then applying ℞ Sodii Biboratis, Zinci Oxidi āā ℥iv, Ol. Gaultheriæ ℥ss, Vaseline ℥iv. M.; Ft. ung. Disinfect room with **Sulphur** and boil bedding, clothes, etc., in sublimate solution. **Oxygenated Water** has proved beneficial to quench thirst; **Salicylic Acid** has been used in grave cases in a mixture of one part **Salicylic Acid** to 75 parts of **Water**, and 30 parts **Syrup of Orange Peel**, a teaspoonful being given every hour by day, and every two hours by night.

(Vol. 1891, p. 434.) **Oil of Eucalyptus** in frequent doses of a few drops shaken up in water, sponging the body and disinfecting bedclothes, furniture, etc., with it. Cold and tepid **Baths** and cold affusions as in treatment of typhoid. In adynamic cases tepid **Baths** and **Stimulants**. If membranous laryngitis occur, Ziemssen advises removal of membrane with **Forceps** and **Lint**, treating tonsils with **Carbolic Acid**, 1 in 2 to 1 in 10 parts, and in very acute cases injection of the acid into parenchyma of tonsil; for nephritic complications he uses warm **Baths**, wrapping patient in blankets afterwards.

SCIATICA. *Græme M. Hammond, M.D. New York.*

Dr. Gustav Eliot[1] relieves temporarily the pains of sciatica by hypodermic injections of morphine combined with atropine, or of theine. The latter drug he administers in doses of ½ a grain, dissolved in hot water, and injects it into the immediate vicinity of the pain. Among the curative agents recommended by Dr. Eliot are the **Salicylate of Sodium,** given in doses of 15 grains every three or four hours, in acute cases, and the **Iodide of Potassium** in chronic cases. Considerable benefit may often be derived from the administration of purely neurotic drugs—aconite, belladonna, and gelsemium. Cantharidal blisters are often of great service. They should be applied every forty-eight hours, and at different situations along the course of the nerve, and especially where there is pain or tenderness.

REFERENCE.—[1] "New York Med. Journ.," July 25, 1891.

Synopsis.—(Vol. 1891, p. 436.) **Osmic Acid,** ♏10 of 1% solution injected into thigh, increased to 15 for two days, and then used tri-weekly. **Exalgine,** gr. ½ to 4 (p. 30). **Rhus Toxicodendron Tincture,** gtt. 1 to 5 for rheumatism of sciatic nerve sheath (p. 49). **Theine,** gr. ¼ to ½, hypodermically (p. 51).

SCLERATITIS.

Synopsis.—(Vol. 1890, p. 462.) **Hot Fomentations,** and a 1% **Ergotine Solution,** of which 8 drops are dropped in daily; internally every morning a powder of **Rhubarb, Magnesia,** and **Soda Carbonate,** and before each meal **Benzoate of Lithia** or **Soda. Cauterization** of sclerotic with galvano-cautery when the disease is stationary, repeating this every few days and blistering behind the ears at the same time; when there is a rheumatic history, give **Salicylate of Soda** and apply **Leeches** to the outer canthus.

SCLERODERMA.

Synopsis.—(Vol. 1890, p. 462.) **Daily Baths** at 85° Fh. for three hours; **Daily Massage** of all the indurated parts; inunction with **Oil** every evening; envelopment in **Flannel** at night; administration of **Iron** preparations; use of albuminous food and free exposure to the open air by day.

SEA-SICKNESS.

Synopsis.—(Vol. 1891, p. 437.) **Eucalyptus Rostrata** in lozenge, gr. 1 in each, 3 or 4 daily. **Bromide of Ammonium** after attention to condition of liver and digestive organs. **Chloroform,** ♏1, in **Soda Water, Nepenthe, Nitrite of Amyl, Cocaine, Creasote, Oxalate of Cerium, Caffeine** and **Antipyrin.**

SERO-PNEUMO-THORAX.

Synopsis.—(Vol. 1890, p. 464.) Introduction of **Sterilized Air** to replace the fluid drawn off.

SKIN GRAFTING. *F. S. Eve, F.R.C.S.*

For extensive ulcerations and loss of substance, the transplantation of large pieces of skin, after Thiersch's method, is of great value. This subject has been fully dealt with by Dr. C. McBurney[1]. The ulcerated

surface, as well as the surface from which the grafts are to be taken, are to be washed with a solution of bichloride of mercury, and this again must be washed away with a solution of common salt in sterilized water (6 parts in 1000). The parts from which the grafts are to be shaved should previously be thoroughly washed with soap and water, and all hair should be removed by careful shaving. In some cases grafts might be placed with success directly upon the unbroken surface of healthy granulations, but a much more certain method of insuring success, and, according to Thiersch, one essential to the avoidance of subsequent contraction, was to remove, by curetting, the superficial layer of granulations, and also the tough cicatricial edge of the ulcer. A bleeding surface was thus produced on which many open capillaries existed, and which was very favourable to immediate union of the grafts. Dr. McBurney had found it more rapid and convenient to use the knife. With a sharp scalpel an incision nearly or quite through the true skin was rapidly made entirely around the ulcer just outside its thickened border. With the same instrument the whole area included by the incision was shaved off. A smooth, bleeding, healthy surface was thus produced. This surface was immediately irrigated with the sterilized salt solution, and compresses of sterilized gauze were placed upon it to control bleeding.

The question of hæmorrhage at this stage of the operation was one of considerable importance. If grafts were placed while bleeding still went on, the risk of failure was much increased. Accumulations of blood, even small ones, beneath the grafts frequently induced their necrosis, and saturation of the dressings with blood was favourable to infection. But all ulcerations, and particularly those on the lower extremities, when shaved, were liable to bleed actively for a long time. The use of Esmarch's constricting band was found to entirely dispose of the question of hæmorrhage, to shorten the whole operation greatly, and not in the least to affect the vitality of the grafts. When, therefore, the situation of the ulcer was such that the band could be applied, it was put on above the whole field of operation, thus rendering the process a nearly bloodless one. The grafts might then be immediately applied, and the dressings put on. The grafts themselves illustrated most decidedly the originality of the Thiersch method. They consisted of thin slices of skin, removed by shaving parallel with the surface. The author had found a broad razor with a very delicate edge the best instrument for this purpose. The most convenient points from which to take the grafts were the front and outer part of the thigh and the outer surface of the upper arm. Taking the razor, the operator wets it in the salt solution, and, applying

the edge at the most distant part of the stretched skin, with a rapid, sawing motion toward himself shaved off as thin, long, and wide a shaving as he could. Four or five inches in length and an inch in width were about the dimensions of a first-rate graft. The grafts might or could be of various thickness, but no graft would do well that was thick enough to include fat upon its lower surface. As it was being cut the graft piled up on the razor. After it was separated from the skin a few drops of the salt solution should be dropped on it, and the razor be immediately carried to the edge of the surface to be covered. With a probe, one end of the graft was then teased off the razor to the raw surface, and while it was held there the razor could be slipped from under it across the surface so as to unfold the graft and deposit it in place. The graft could then be readily adjusted with two probes. It should be so placed that its edge would follow up the perpendicular edge of the prepared surface and reach very slightly on to the uncut skin. In that manner graft after graft was placed, great care being taken that the edges were in neat apposition to one another and were at no point folded under. From time to time a little salt solution should be sprinkled on the grafts already placed to prevent their becoming too dry, which would destroy their vitality. Strips of Lister protective or of thin rubber tissue, about an inch wide and long enough to a little more than cross the grafted surface, should then be laid on like shingles, overlapping one another, over the entire area. These strips, previously sterilized in bichloride or carbolic-acid solution just before use, should be drawn through the salt solution. They should be gently pressed on the grafts, and then covered with some soft sterilized material, such as a compress. This substance should be wet in the salt solution and piled up over the protective ; over this again a large piece of protective or rubber tissue should be applied to prevent rapid evaporation, and finally a well applied gauze bandage. The surface from which the grafts were taken did well under the salt solution. After wetting the surface, the part was completely covered with rubber tissue, and dressed with sterilized gauze. This method of dealing with the denuded surface had given entire satisfaction.

The variety of lesions to which Thiersch's method was adapted was very large. It included all ulcerations upon any part of the external surface. Those not familiar with the method would be surprised to see how perfectly and successfully these grafts could be applied to the surfaces produced by extensive operations for the removal of malignant and other tumours—to any raw surface, in fact, which could not be covered by the adjacent skin. It was astonishing to see the variety of tissue to which the grafts would adhere firmly. Muscle,

fascia, cartilage, and even bone might all be successfully grafted. The most favourable surface was a clean, muscular one, and the least the surface of compact bone.

In one case, after the removal of an extensive carcinoma of the face, a large area of lower jaw was completely bared. Grafts laid over this surface had adhered almost perfectly throughout, and at the end of a week those that covered the bone were found to be soundly attached to it. In another case a surface several inches in diameter on the back of the forearm included a number of extensor tendons. The grafts applied were more than usually successful, and complete healing was rapidly attained. The breast cases were of special interest, as entire liberty could be taken in thorough removal of the disease, for the denuded surface could be covered without resorting to any plastic operation. Thiersch advised that the gauze placed immediately over the protective should be kept constantly moist with salt solution, and said that to effect this it was necessary to moisten the gauze every four hours. As this was very laborious, the author had extended the time to once in two days, and the cases treated in this manner had done very well. At the end of forty-eight hours the dressings were all removed except the protective which lay next to the grafts. A fresh wet dressing was applied, and changed again after two days. By that time there was usually some formation of pus, as it was unusual for a case to go on a whole week without some suppuration. The discharge should be carefully removed and fresh dressings applied. It was the author's practice to leave the protective in place from ten to fourteen days, as the too early application of a dry dressing destroyed the vitality of the grafts. The length of time occupied in attaining sound healing had varied from a week to two months.

REFERENCE.—"New York Med. Jour.," Oct. 18, 1890.

SLEEPING SICKNESS. *Frank J. Wethered, M.D.*

This is a disease limited to a part of the West Coast of Africa. Dr. Stephen Mackenzie had the opportunity of watching a case at the London Hospital, and thus describes it in a paper read before the Royal Medical and Chirurgical Society :—

"The patient, a young negro, about twenty-two years of age, was born and had lived all his life on the Congo. The little village from which he came was situated in a valley about 1,300 feet above the sea, and had been decimated by "sleeping sickness." His mother, two sisters, and almost all his near relatives on both sides of the family had been carried off by this fatal malady. The patient was a married man with two children. With the exception of two attacks of malarial fever he had always enjoyed good health until the present

illness, and appeared to have been unusually intelligent and trustworthy. The disease began at the commencement of the present year, being preceded by an attack of diarrhœa, apparently not dysenteric, which lasted a month. He came to England in June for the express purpose of seeing if anything could be done to cure his disease. When the patient came to England in June his mental condition was good; he was usually vivacious, but inclined to be drowsy at times in the day, and had a slight drooping of the eyelids, which gave him a peculiarly heavy expression of face, said to be characteristic by those familiar with the disease. He had an eczematous condition of the legs, the functions of digestion and assimilation were well performed, and there was no evidence of any visceral disease. He was set to do light work, such as chopping wood, but his muscular power became increasingly impaired, so that he walked with a tremulous and tottering gait, had great tremor of the tongue and upper extremities, and an increasing mental hebetude and lethargy. He had some kind of attack in which he was found unconscious, with high temperature and profuse perspiration, in the evening of October 5th, and was brought to the hospital on the following day. He was then fairly nourished, free from visceral disease, and had a temperature of 103°. He was exceedingly tremulous, his gait very feeble. He slept a good deal in the daytime, but when roused up appeared intelligent and observant. He was not anæmic. His urine was scanty and, consequently, of high density; it contained a trace of albumen on the first two occasions of being examined, but never afterwards. Since admission he had lost flesh and strength. Irregular pyrexia had nearly always been present. His appetite on the whole had been good, except when he was specially feverish. His mental condition had been one of torpor or lethargy. When roused he appeared intelligent, but was very quiet, only giving monosyllabic answers to questions, and rarely venturing a remark. He had many little sleeps in the daytime, but rarely slept for long together either by night or day, so that the total amount of sleep did not exceed the amount usually taken by healthy people. He had had one rigor followed by increased tremor, occasional incontinence of urine, and a bedsore had formed over the sacrum. His urine had always been of high specific gravity and deep colour. Filariæ were always present in his blood, by day as well as by night, the normal periodicity of filarial migration being probably interrupted by the pyrexia present. The maximum observed in 20 cubic millimètres had been seventy-eight, from which it might be calculated that at that time, assuming the blood generally to contain the same proportion as that in the finger ends, the total number present was 118,965,600."

Dr. Mackenzie believed that the occurrence of the filariæ in the blood was accidental, but added that the exact nature of the disease was not determined by the study of the present case. The symptoms indicated some affection of the highest nervous centres without definitely pointing to its precise nature.

REFERENCE.—"Brit. Med. Journ.," Nov. 22, 1890.

SMALL-POX.

Synopsis.—(Vol. 1891, p. 438.)—Application of an **Antiseptic Ointment.** ℞ Salicylic Acid, 3 parts; Starch, 30 parts; Glycerine, 70 parts, M. Applied to face by means of a mask. Internally a mixture of **Quinine** in **Cherry Laurel Water, Oil of Sweet Almonds,** and **Syrup of Orange Flowers,** a few drops dropped on back of the tongue three or four times hourly.

SNAKE BITE. *Fank J. Wethered, M.D.*

The following will interest those readers who are resident in districts where snake-bite is common. A man had been bitten and had afterwards ridden two miles. When seen he was in a semi-comatose condition: skin cold and pallid, pupils dilated and apparently insensible to light, pulse 80, unable to rise or walk without assistance, and only kept awake by force. He had been given two ounces of brandy. Mr. Ray, who reports the case, immediately injected ♏20 of a solution of **Strychnine** (gr. 1 in ♏240); repeated the dose in half-an-hour, and gave him a third injection within the hour, after which the patient said he "did not feel nearly so sleepy," and his appearance improved. A profuse perspiration came out, and the pulse rose to 120. The treatment was continued with diminished doses and prolonged intervals, until gr. ¾ had been administered in the course of about ten hours; as the coma then returned, Mr. Ray pushed the treatment, and in the next six hours injected another gr. ½. After slight twitching of the hands the drug was stopped; and the patient made a good recovery. The beneficial effects of the strychnine were always obvious within three or four minutes of each dose, and lasted from half an hour to an hour and a half.

REFERENCES.—"Pract," June, 1891; "Australian Med. Gaz.," Feb., 1881.

SNOW-BLINDNESS.

Synopsis.—(Vol. 1890, p. 465.) **Cold Compresses** and **Atropine.**

SPASM (Muscular, Localized).

Græme M. Hammond, M.D., New York.

Dr. Wm. Leszynsky[1] reports two cases, one of spasm of the muscles of the right side of the neck, the other a case of facial spasm, which were promptly relieved by hypodermic injections of atropine. He refers to a third case, one of torticollis, which he successfully treated by injections of **Atropine** some time previously.

His method is to give daily injections of the drug, which he administers in the form of a solution in water, of a strength of 1 grain of atropine to 1 ounce of water. Daily injections are given, beginning with a dose of $\frac{1}{120}$ of a grain, or 4 minims of the solution. The dose is gradually increased until a maximum quantity of $\frac{1}{8}$ or $\frac{1}{6}$ of a grain is reached. It may not be necessary to give such large doses. In one case only $\frac{1}{40}$ of a grain was necessary. All of the cases treated, though they were very severe forms of muscular spasm, recovered in from two to five weeks. The injections were made, as nearly as possible, into the affected muscles.

Keene[2] has formulated an operation, which he has performed once on the living subject, for the relief of spasmodic torticollis by the excision of portions of the posterior divisions of the first three cervical nerves.

Southam excises a portion of the spinal accessory nerve for the same purpose. An incision three inches long is made along the anterior margin of the upper end of the sterno-cleido mastoid, the nerve is exposed, and a third of an inch of its trunk is excised just before it enters the lower surface of the muscle.

REFERENCES.—[1]"New York Med. Journ.," March 14, 1891 ; [2]"New York Med. Journ.," April 18, 1891.

SPINAL CORD (Surgery of).

William Thorburn, B.S. (Lond.), F.R.C.S.

HISTORICAL.—Operations upon the interior of the vertebral canal have been suggested, and indeed, carried out, at various intervals during the present century; but it is only within the last few years of the antiseptic era that they have been generally recognized as a legitimate surgical procedure. Louis[1] was apparently the first to remove some fragments of the spine, which had been driven in upon the cord in a case of gunshot wound of the back, but this was not a formal operation, and was merely an application of the universal rule in such compound fractures. In 1814 Cline, at the instigation of Sir Astley Cooper[2], deliberately removed part of the vertebral arches, in order to relieve pressure in a case of fracture-dislocation of the spine. As regards spinal caries, Ashhurst[3] states that Heine, Roux, Holscher, and Dupuytren removed portions of the vertebræ "for disease," but the first original record with which the writer is acquainted is that of Atkin, of Sheffield[4], who reports an operation performed by Jackson. Horsley[5] first operated upon a case of tumour within the spinal canal. These are the earliest operations in three of the most important conditions with which we have to deal, but similar procedures have of late become so frequent that Lloyd[6] has been able to collate one

hundred and fifty-five records, and a careful search brought up to date would certainly add even to this list. Space will not permit of reference to all these cases, but the reader in search of a full bibliography may be referred to some of the papers mentioned at the end of this article.

We may proceed at once to the consideration of the various conditions in which operation has been advocated, noting the special indications and results, and we may then refer to the methods of operation and to certain points of diagnostic importance.

INJURIES.—It may be taken almost as an assumption that we should endeavour to remove splinters of bone or foreign bodies in all cases of compound fracture or penetrating wound of the spinal canal. Such an operation brings no fresh risk to the patient, and certainly improves his chances of life and recovery. Any procedure of this kind will, of course, be carried out with the strictest antiseptic precautions, and careful drainage must be allowed for in wounds which are not surgical but traumatic, and which will, therefore, probably suppurate.

The writer has analyzed forty cases of *penetrating wounds* (generally stabs) of the spinal canal, and has obtained the following results: In five cases the meninges only were wounded, the cord escaping; in five the cord injury was equilateral, producing paraplegic symptoms; in twenty-five it was mainly or entirely unilateral; the other records are incomplete. Owing to the limited character of the injury, the more serious complications met with in crushes of the spinal cord ("bedsores," vesical and respiratory troubles, etc.) are seldom met with. Acute meningitis or myelitis is clearly described in but seven cases, all of which were fatal from this cause. The prognosis as regards life is fairly good, only fifteen cases being fatal out of thirty-eight, in which the ultimate result is stated, and of these deaths seven certainly and two probably were due to septic inflammation, thus emphasizing the necessity for aseptic treatment. As regards recovery of function in injuries of the cord itself, the prognosis is however by no means so good, such recovery having been perfect in but one out of twenty fully described cases. These results appear to indicate that the human spinal cord has little if any power of regeneration after section. As to treatment, we may lay down the following general indications: (1,) Remove foreign bodies if present; (2,) Render the wound aseptic and keep it so; (3,) Promote rapid healing. In removing foreign bodies (knife blades, etc.) ordinary surgical means will be adopted, but great care must be taken not to plough up the cord by incautious movements either of the foreign body itself or of

instruments; unnecessary probing should be carefully avoided. Minute wounds may perhaps best be closed by collodion; layer wounds require an antiseptic dressing, and will probably generally do best without sutures; antiseptic fluid injections are dangerous, as they may enter the vertebral canal. In some cases the flow of cerebro-spinal fluid is very profuse, and appears to be dangerous; the wound may then be hermetically but antiseptically sealed. (The cases, upon an analysis of which the above conclusions are based, are fully discussed in the writer's unpublished Jacksonian Prize Essay, 1891, which is in the library of the Royal College of Surgeons.)

Gunshot wounds of the spine are rarely seen in civil life, but the treatment will conform to that of other wounds. According to Lidell (Ashhurst's "Encyclopædia of Surgery," vol. iv., p. 779) there were reported during the American War six hundred and forty-two such cases, of which 55·5 per cent. were fatal, and of which only 16·5 per cent. recovered sufficiently to return to active service. In twenty-four cases fragments of vertebræ were removed, and of these ten were fatal, but in the remaining fourteen the fracture implicated the vertebral processes only. In a few cases bullets have been removed at long intervals after the injury, but the difficulty of such a procedure is well illustrated by the case of the late President Garfield, and by a case recorded by Eve[7].

The formal operation of "trephining" the spine for injury is applicable in one of the following conditions—fracture, dislocation, intra-spinal hæmorrhage, and pressure from chronic meningitis of traumatic origin. Formerly the operation was called "trephining," on the analogy of cranial operations, but the trephine is now seldom used, and the term "laminectomy" has been substituted. Lloyd (*loc. sup. cit.*) rightly points out that the word "laminectomy" has the advantage of not being of bastard derivation (λαμινα and ἐκτεμνω).

The writer has collected (up to Dec., 1890) eighty-four cases of laminectomy for injury, and of these 55 per cent. proved fatal, while in six the result is unknown. Lloyd states that among the one hundred and three cases which he has collected (July, 1891) there were fifty-eight deaths, or 56 per cent. This mortality compares favourably with that of cases not submitted to operation, there being a percentage of eighty deaths among two hundred and seventy cases referred to in Gurlt's[8] elaborate analysis. As a physiological experiment, opening the spinal canal is by no means very fatal. On these and other grounds it is now generally admitted that laminectomy does not add seriously to the dangers of an injury of the spinal cord.

As to whether the operation holds out any reasonable prospect of

recovery of function there is greater difference of opinion. In 1889 the writer ("Surgery of the Spinal Cord," p. 161) stated that "The operation of trephining the spine for traumatic lesions, as compared with the condition which it is intended to relieve, does not present any very great dangers, and appears unlikely to increase the gravity of the prognosis, but that as both *à priori* argument and the results of published cases show that it is unlikely to be of service, it should be abandoned, except in cases of injury to the cauda equina." With certain reservations to be made immediately, I am only confirmed in this opinion by a further experience of cases and study of recent literature. The main reason for this non-success is that the spinal cord is seldom permanently compressed by the vertebræ. The displaced bones generally recoil immediately after the injury, and, having crushed the cord, leave the spinal canal again patent, so that there is no remaining mechanical pressure susceptible of relief by operation. This view was long ago urged by Jonathan Hutchinson[9], and a large experience of post mortem examinations has convinced me of its correctness. If, now, the majority of cases, in which there is no permanent pressure, do not recover *(quoad sanitatem)*, there is no reason to expect recovery after operation in the minority of cases, in which there is permanent, and generally still more severe compression. Such is, in brief, the *a priori* argument, for details of which reference must be made to the original papers, and published cases appear to me to lead to the same conclusions.

Other writers have, however, taken a different view. They say that analysis of all published cases is useless, as many belong to the pre-antiseptic era, and, confining themselves to the more recent cases, they work out a lower statistical mortality. This lowered mortality may be admitted without granting that the results of operations have improved as regards recovery of function. On the latter point opinions remain divided. Horsley[10] states that "trephining of the spine for injury is an operation of very slight danger, intended to meet an almost hopeless condition, and the chance of its doing any good, although also very slight, is sufficient to render it a correct practice." The only difference therefore between Horsley's view and my own lies in the alternative answer to the question "Should the operation be adopted as a routine practice on the 'off-chance' of its doing any good?" Horsley himself records six cases with four partial and no complete recoveries.

The American surgeons are more enthusiastic in their advocacy of the operation. White[11] holds that "the later results . . . are distinctly encouraging, and resections of portions of the vertebræ in

fractures, possibly even in dislocations, should be recognized as an eminently proper operation, and in suitable cases altogether warranted by the facts in our possession." In a more recent paper the same surgeon says: "The results are encouraging, and should lead to the more frequent employment of resection of the posterior arches and laminæ: (*a*,) In all cases in which depression of these portions, either from fracture or from dislocation, is obvious; (*b*,) In some cases in which after fracture rapidly progressive degenerative changes manifest themselves; (*c*,) In all cases in which there is compression of the cauda equina from any cause; (*d*,) In the presence of characteristic symptoms of spinal hæmorrhage, intra or extramedullary."[12] Abbe[13] records several interesting cases, and concludes that "while we are not warranted in taking a sanguine view . . yet surgery . . . ought not to occupy the ultra-conservative ground of the past in this field." Lloyd *(loc. sup. cit.)* speaking collectively of laminectomy for injury and for various diseases, says "that the procedure is not only justifiable, but eminently proper."

In France and Germany laminectomy for injury does not appear to have obtained much favour. On the whole we cannot but conclude that the results have been disappointing, and, as clinical evidence goes to show that the cord has but little power of repair after *acute* compression, they will probably remain so.

We may pass now to the consideration of certain classes of injury which stand out as being eminently suitable for operative treatment. When the pressure on the cord is due, not to displacement of the bones, but to *intraspinal hæmorrhage*, it is generally admitted that such pressure should be relieved. Those cases are, however, few and difficult to diagnose. The diagnosis must rest mainly upon the absence of local deformity, and the incomplete character of the symptoms, especially incomplete paralysis or anæsthesia and the non-disappearance of the reflexes[14]. Such signs are, however, far from being entirely reliable, and a very accurate study of all the details of a case will be needed to arrive at even a probable diagnosis.

Secondary paralysis from *pachymeningitis* is a rare result of injury, but would be a condition eminently suitable for operation. Willett[15] records a case which may perhaps have been of this nature, although it appears to the writer to have been one of tubercular caries.

Fractures of the *laminæ only* are not common, and these also are seldom easy to diagnose. A very succeesful instance of operation in a case apparently of this nature, from the practice of Péan, is recorded in the "Brit. Med. Jour." for 1889, vol. i., p. 672.

Lastly, so far back as 1888, I[16] advocated operation in injuries affecting not the cord but the *cauda equina*, *i.e.*, in injuries below the level of the first lumbar vertebra. The cauda equina consists of a bundle of cords which are essentially peripheral nerves, and which appear to have the usual reparative power of such nerves. Hence we may expect them to recover from all injuries, unless there be persistent pressure, as from displaced bone or cicatricial tissue, and if there be such persistent pressure we may expect them to recover after its removal by operation. The results of published cases lead to the same conclusion as the theoretical argument. Thus, then, these cases should certainly be submitted to operation. This is, I believe, generally admitted. The only difference of opinion is as to the *time* of operation. The writer's view is that we should, as a rule wait—for say six weeks—to allow of the spontaneous recovery which is quite usual; this is the course generally pursued in contusions of, or pressure of callus, etc., upon other peripheral nerves. On the other hand, many recent writers regard delay as dangerous, and would advocate immediate operation.

To sum up. In traumatic lesions of the spine and its contents:—

(1,) Operation is generally advocated in: (*a*,) Compound fractures: (*b*,) Wounds with entrance of foreign bodies; (*c*,) Pressure from hæmorrhage; (*d*,) Pressure from secondary pachymeningitis; (*e*,) Injuries of the laminæ only; (*f*,) Injuries of the cauda equina.

(2,) As regards other lesions the question remains *sub judice*.

Spinal Caries.—Paralytic symptoms may arise in spinal caries from one of several causes. Very rarely there is dislocation of the spine with direct pressure on the cord, which is found in but 2 per cent. of all cases[17]. As a rule, the trouble is due to tubercular granulations, which grow readily in the peridural tissue, and constitute a tubercular peri-pachymeningitis: these granulations may at a later stage involve the dura (pachymeningitis), and they rarely perforate that membrane. The granulations either directly compress the cord or they give rise to congestion and œdema of its substance. Such a condition may persist for a long time without causing irreparable damage in the cord, although ultimately degeneration will supervene. The change is not one of true myelitis, the latter condition being either non-existent or at least extremely rare. This pathological view is taken by most recent writers as Kraske *(loc. cit.)*, Schmaus, Strümpell, Elliott[18], etc. More rarely the pressure is due to spiculæ of bone, hæmorrhage, or bursting of abscess into the spinal canal. Arbuthnot Lane[19] appears to have had an experience somewhat different from that of most observers, as he states that out of eleven operations per-

formed by himself, "in every case with one exception the cord was compressed by an abscess," and "in none of these cases was there observed any such fibrous neoplasm involving the posterior surface of the dura mater," etc.

Where the pressure arises from dislocation, it is best met by extension and fixation (Kraske); in the other cases, which constitute the great majority, we may consider the advisability of operating.

It is, however, to be remembered that a great many cases of paraplegia due to Pott's disease will spontaneously recover under the influence of complete rest; on this point also there is general agreement, and the necessity for operation is thus lessened. Hence it may, at the outset, be admitted that we must only operate when rest and general treatment are not accompanied by improvement.

Chipault[20] has collected thirty-five cases of laminectomy, of which two are original, and among which there are ten deaths, and twenty instances of complete cure or marked improvement. When recovery follows the operation it usually begins within a few hours or days, and progresses steadily, the sphincters quickly regaining their power, and sensation returning before movement. In those cases which have not been benefited by operation, it would appear that the removal of the laminæ has not been sufficiently extensive to allow of complete scraping out of the tubercular granulations; possibly the cord is sometimes degenerated beyond the possibility of repair. Of the deaths, three or four only appear to have been directly due to the operation; in these the lesion has been high up and the cord has been injured. In some cases pre-existing complications have proved fatal, and in others the operation has been followed by general tuberculosis. Return of symptoms may be due to dislocation (Kraske), or to fresh growth of tubercular granulations. In the latter case it would appear reasonable to repeat the operation.

In a more recent paper White[21] analyzes forty cases, including those of Chipault, and finds that in twenty-two there was either improvement or absolute cure, while the mortality amounted to 30 per cent. Lane[22] records eleven personal operations with one death.

The facts and statistics thus brought out by the analyses of Chipault, White, and others, are sufficiently in favour of the operation, and we have chiefly to consider what are the indications for its performance.

Occasionally the caries is limited to the vertebral arches: we can then, by their removal, simultaneously excise the form of the disease, and relieve the pressure upon the cord. Hence operation is distinctly indicated in such cases, of which an example is recorded by Abbe[23].

As a rule, however, the disease commences in the bodies of the

vertebræ, and the granulations thus project backwards against the cord. Here we cannot excise the diseased focus itself, and the indication for operation is less obvious. In the first place we must, as already stated, not operate if the cord appears likely to do well with rest alone. We must also not operate in cases of general tuberculosis or of active tuberculosis elsewhere. MacEwen[24], who performed the first series of operations, and obtained excellent results, discountenanced operation if there was rise of temperature (*i.e.*, in presence of active tuberculosis). Bullard and Burrell[25] also contend that there must be good general nourishment with slow increase of paralysis ; the latter must have been present long enough to have proved refractory to general treatment, but not so long as to have probably caused entire degeneration of the cord ; on the other hand, we may operate in cases getting *rapidly* worse if life is directly threatened, but not otherwise. A similar view is taken by most writers. We may perhaps state roughly that the following are absolute contra-indications : high fever, active tuberculosis elsewhere, rapid increase of symptoms which yet do not directly threaten life. The prognosis is better in children, and is of course better when the disease is lower down and less extensive in its distribution. Lane, who has obtained very good results, would urge operation, with as little delay as possible, in every case of paraplegia due to spinal caries, but other members of the Clinical Society, to which Lane's paper was read, did not appear to endorse this view.

Tumours.—The happy results of operation to relieve the pressure of spinal caries indicate that we may expect a like issue in the chronic pressure lesions due to tumours. The first and best case of this nature is that of Gowers and Horsley ("Med. Chir. Trans.," vol. lxxi.), which is too well known to require elaborate discussion. In this operation a myxoma, about the size of a filbert, was removed from the spinal canal beneath the second and third dorsal laminæ, the patient recovering perfectly from a most serious and painful group of symptoms. Horsley's[26] second case died from shock. A good case of similar nature is recorded by Rehn[27]. A man, aged nineteen, suffered from violent and intractable "neuralgia," spinal rigidity, paresis of bladder and rectum, loss of knee jerks, weakness of lower limbs, bedsore on right great trochanter, etc. The diagnosis arrived at was tumour of the cauda equina. The spine was opened, and there was exposed a tumour as thick as the little finger, extending from the fifth lumbar to the second sacral vertebra, and compressing the cauda equina. This being removed with scissors and a sharp spoon, proved to be a lymphangioma. The patient made a good recovery, and was able to

return to light work. Abbe[28] records a fatal case of removal of an extradural sarcoma.

These are the only recorded cases known to the writer in which laminectomy has been performed for true intraspinal tumours, but the results are sufficiently encouraging, especially in view of the fact that such tumours are generally benign (Horsley). Other cases are recorded as removal of "tumours" in which the mass was of inflammatory or tubercular origin, and my colleague Wright has scraped out an intra-vertebral prolongation of a sarcoma of the neck with marked benefit to the patient (Writer's "Surg. of Spinal Cord," p. 168).

Spina Bifida.—In certain cases of old (cured) spina bifida there is cicatricial pressure upon the cauda equina, and similar pressure is produced in some cases of the rare affection known as spina bifida occulta. Cases of this nature are recorded by Ogston[29], Recklinghausen[30], Brunner[31], Sutton[32], the writer[33], and others. In such cases good results may be expected from laminectomy with removal of the compressing tissue, and these anticipations are fulfilled in a case treated by Ross and Jones, and recorded in the "Brit. Med. Jour." for Jan. 24, 1891. [The bibliography of spina bifida occulta is partially given by Joachimsthal[34].]

Neuralgia.—In cases of intractable neuralgic and spasmodic affections of the brachial plexus the vertebral canal has been opened and the posterior (sensory) roots of the plexus divided or resected with advantage. Abbe[35] was the first to perform this operation, which he has since repeated. The first case improved greatly, but the neuralgia returned; in the second, improvement was maintained up to the time of the report. Bennett[36] divided the roots of the sciatic in a case of intractable neuralgia, with immediate relief of the pain, but the patient died from cerebral hæmorrhage on the twelfth day. Horsley[37] has also twice obtained relief by this method. It remains to be determined how far the relief in such cases is permanent, as most operations for neuralgia are ultimately disappointing.

Method of Operating.—In traumatic cases the lines of a formal operation have often to be more or less departed from, according as we find fractures of various parts of the vertebræ which may assist or hinder our action. The following remarks apply to cases in which the bony relations are practically normal, as in all operations for disease and many for injury. Horsley[38] makes a median incision, dissects down to the laminæ with the knife, arrests hæmorrhage, and makes transverse incisions in the vertebral aponeurosis to obtain more room. The periosteum is then reflected from the spine with an elevator, a

spinous process cut off with bone forceps, and the vertebral arch opened by a trephine, of which the pin is placed on the centre of the base of the spinous process, and of which the diameter is equal to the width of the spinal canal. If more than one arch has to be removed, this is done with a saw and bone forceps. Abbe[39] makes a vertical incision on one side of the middle line and cuts down to and clears the laminæ of that side; he then reflects the tissues towards the opposite side, cutting through the bases of the spinous processes, so as to turn them over with the soft parts; the laminæ are then cut through with rongeurs "with incredible ease." Other surgeons have used an H-shaped incision (Bullard and Burrell and Dawbarn), a V-shape (Demons), crucial (Morris), etc. For removal of the laminæ, the trephine, Hey's saw, bone forceps, and Hoffmann's forceps have been used. The writer's own experience has been solely with the median vertical or lateralised vertical incision, the latter being completed by two transverse cuts above and below. An incision which includes a transverse cut certainly gives more room, and as the spine is deeply placed and the muscles strong and tense, this is much needed. The method of removing the laminæ will probably depend mainly upon the operator's own proclivities in the use of an instrument. Several surgeons (Wright and others) have replaced portions of the excised laminæ.

The canal being opened, circumstances will decide whether the dura must be incised. In the case of an extradural tumour, or a pachymeningitis, such an addition to the operation is useless; but in section of nerve roots and in cases in which the source of trouble is not found outside the dura, that sheath must be opened. Horsley states as a result of vivisection experiments that anæsthesia must be very profound during incision of the dura, as the membrane is very sensitive, and that the incision must be accurately median to avoid blood-vessels. Blood clot, pus, cicatricial or tumour tissue, etc., will be removed from without or within the sheath by ordinary methods of dissections, with scalpel or scissors, scraping, curetting, etc. The canal may be explored above and below the wound, and in front of the cord by careful probing or the use of the raspatory. Most operators advise closure of the dural incision by fine catgut sutures. Questions of drainage, suturing, and dressing will be decided by the general bias of the operator, but it is not advisable to carry a drainage tube quite down to the opening in the dura, if such there be, because excessive flow of cerebro-spinal fluid may thus be promoted. Anæsthesia requires considerable care owing to the position of the patient, and the frequent implication of his respiratory muscles, or even

of his cardiac innervation. Shock is often considerable, but the wound generally heals well.

A further extension of the operation has been suggested in extensive lesions. Duncan[40] drew together the dura above and below a crushed segment and stitched it, but without benefit. Abbe (*loc. sup. cit.*) has attempted the resection of a crushed segment with suture of the ends; and he also quotes with approval a suggestion made to him by Dana to graft the roots below an injured portion on to those above.

Certain other procedures have been attempted or suggested. Malgaigne advocated the elevation of a detached and impacted spinous process, either by means of the fingers, through the unbroken skin, or by cutting down, making traction, and attaching it by ligature to a dorsal splint. Halstead[41] cut down upon a dislocated twelfth dorsal vertebra, removed the transverse processes of the first lumbar, and, making traction upon the spine of the last dorsal, with conforming manipulation of the trunk, drew back the displaced vertebra. Lampiasi[42] adopted a similar course. Hadra[43] reports a case of fracture in which he endeavoured to immobilise the displaced vertebræ by passing a silver wire around their spinous processes, and he recommends a similar procedure in traumatic displacements and in some cases of caries. It would be out of place here to discuss the value of these various procedures.

Diagnosis.—Before operating upon the spinal cord we require an exact diagnosis as to the nature and position of the lesion. The diagnosis of the nature of the lesion has not during the last few years made any great advances of value to the surgeon, and it is generally sufficiently accurate. Should it not be so, an exploratory operation is certainly indicated if there appears to be any probability of giving subsequent relief.

As to the position of the lesion we must be able to localize it: (*a*,) With regard to the segment of the spinal cord; and (*b*,) With regard to the spinous processes of the vertebræ, which are our only landmarks. The latter procedure presents little difficulty. The relation of the points of origin of the various nerve roots to the vertebræ has long been known (*cf.* Gowers' "Diseases of the Spinal Cord," etc.), and the details of variation in such relations have been fully worked out by Reid.[44]

Localization of the exact position of the lesion in the cord has been worked out by physiological experiment, anatomical investigation, and clinical study of the exact distribution and functions of each root. On these points reference may be made to Ferrier and Yeo, ("Proc. Roy. Soc.," No. ccxii., p. 12, and "Brain," 1882, p. 226); Herringham ("Proc.

Roy. Soc.," No. ccxliii., p. 255), Gowers ("Diseases of the Nervous System," vol. i., p. 142), Thorburn ("Surgery of the Spinal Cord,") and more recently to cases reported by Bruns ("Deut. med. Woch.," 1889, No. 48), Herter ("Jour. of Nerv. and Ment. Dis.," June, 1891), Hoch ("John Hopkins Hosp. Rep.," vol. ii., No. 6, Baltimore, 1891), Johnson and Murray ("Brit. Med. Jour.," Oct. 31, 1891), etc. To discuss this subject fully would be beyond the scope of this article, but it is obvious that, unless, as in some cases of caries and injury, there be external evidence of the position of the lesion, an accurate localization from nervous symptoms must be made before operation is undertaken. The diagnosis of affections of the cauda equina will be found in the articles of Thorburn (*loc. cit.*), Mills ("Med. News," March 1, 1890), etc.

REFERENCES.—The following have been selected as giving the largest amount of information upon the subjects of the above article :— Gowers and Horsley, "Med. Chir. Trans.," vol. lxxi. (deals mainly with tumours and operative technique); MacEwen, "Brit. Med. Jour.," 1888, vol. ii., p. 308 (spinal caries); Thorburn, "Surgery of the Spinal Cord," London, 1889 (injuries, localization, and general indications); Chipault, "Gaz. des Hop.," Aug. 2, 1890 (injuries); Abbe, "Med. Rec.," July 26, 1890 (general); Kraske, "Arch. f. klin. Chir.," 1891, p. 381 (caries); Horsley, "Brit. Med. Jour.," Dec, 1890 (general results); Chipault, "Arch. Gén. de Méd.," Oct., Nov., and Dec. 1890 (caries); Lloyd, "Am. Jour. Med. Sci.," July, 1891; White, "Therap. Gaz.," Oct. 15, 1891.

The most extensive recent bibliography is to be found in the two papers of Chipault.

[1]"Arch. gén. de Méd.," 1836, vol. xi.; [2]South's "Chelius," vol. i., p. 539; [3]"Injuries of the Spine," Philadelphia, 1867, p. 56; [4]"Brit. Med. Journ.," 1883, vol. i., p. 812; [5]"Med. Chir. Trans.," vol. lxxi.; [6]"Am. Journ. Med. Sci.," July 18, 1891; [7]"Am. Journ. Med. Sci.," July 18, 1868, p. 103; [8]"Handbuch der Lehre von den Knochenbrücken," Hamburg, 1864; [9]"Med. Times and Gaz.," 1875, vol. i., p. 226, *et seq.*; [10]"Brit. Med. Journ.," Dec. 6, 1890; [11]"Ann. of Surg.," July, 1889; [12]"Therap. Gaz.," Oct. 15, 1891; [13]"Med. Record.," July 26, 1890; [14]Bastian, "Med. Chir. Trans.," 1890; Bowlby, idem.; Herter, "Journ. of Nerv. and Ment. Dis.," June, 1891; [15]"Lancet," April 12, 1890; [16]"Brain," Jan., 1888; [17]Kraske, "Arch. klin. Chirurg.," 1891, p. 381; [18]"New York Med. Journ.," June 2, 1888; [19]"Brit. Med. Journ.," Oct. 31, 1891; [20]"Arch. gén de Méd.," Oct., Nov., and Dec., 1890; [21]"Therap. Gaz.," Oct. 15, 1891; [22]"Brit. Med. Journ.," Oct. 31, 1891; [23]"Med. Record," July 26, 1890, case iv.;

[24]"Brit. Med. Journ.," 1888, vol. ii, p. 308 ; [25]"Boston Med. Journ.," Oct., 1889 ; [26]"Brit. Med. Journ.," Dec. 6, 1890 ; [27]Supplement to "Cent. f. Chir.," 1891, No. 26, p. 97 ; [28]"Med. Record," July 26, 1890; [29]"Lancet," 1876, vol. ii., p. 13 ; [30]"Virchow's Archiv.," Bd. 105, p. 243 ; [31]"Virchow's Archiv.," 1887, p. 494 ; [32]"Lancet," July 2, 1887 ; [33]"Brain," Jan., 1888 ; [34]"Berlin. klin. Woch.," June 1, 1891 ; [35]"New York Med. Rec.," Feb., 1889 ; Ibid., July 26, 1890 ; [36]"Brit. Med. Journ.," 1889, vol. 1, p. 945 ; [37]"Brit. Med. Journ.," Dec. 6, 1890 ; [38]"Med. Chir. Trans.," vol. lxxi. ; [39]"Med. Record," July 26, 1890 ; [40]"Edin. Med. Journ.," March, 1889 ; [41]"New York Med. News," 1885, p. 16 ; [42]"Bull. Méd.," 1889 ; [43]"Philadelphia Times and Reg.," May 21, 1891 ; [44]"Journ. of Anat. and Phys.," 1889, p. 341.

SPINE (Diseases of). *F. S. Eve, F.R.C.S.*

Diagnosis of Pott's Disease.—Dr. Ripley[1] points out that the ordinary symptoms, such as pain on pressure or movement, or on suspension by the head, the deformity, etc., are not absolutely diagnostic. The condition in question is, of course, easily recognized in many cases, but others occur in which it is a difficult matter to say whether the patient has or has not disease of the spine. It is in these doubtful cases that the following method is of value. The patient is laid on his belly, the feet are seized with one hand, and making counter-pressure with the other hand against the spine, above the seat of the curvature, the body is carefully bowed backwards. If the case be one of true Pott's disease, the spine will not be straightened, while the curvature will be obliterated in all other cases. There can, he thinks, be no question as to the importance and value of this test in all cases of doubt.

REFERENCE.—[1]"Lond. Med. Record," Dec. 20, 1890.

SPLEEN (Treatment of Enlarged). *Frank J. Wethered, M.D.*

With the advancement that surgery has made within the last few years, especially in relation to the internal organs, it is no matter of surprise that it has been suggested to remove the spleen when this organ has become chronically enlarged.

Mosler contributes an article on this subject in the "Wiener medizinische Wochenschrift," 1890, vol. i., p. 3. He commences by drawing attention to the dangers of operative interference in cases of enlarged spleen, and states as the result of his experience that the hæmorrhagic diathesis is often associated with an enlarged spleen, which naturally renders the operation of extraction an exceedingly dangerous one, and what adds considerably to the risk is that the tendency to hæmorrhage often remains latent in such cases. In

addition to this danger, there is another more probable and serious one, namely, that the lymphatic glands on other parts of the body may already be affected, in which case splenotomy may only hasten the general disease. Mosler has, therefore, for some time tried other local remedies rather than extirpation. He first used parenchymatous injections of a 2 per cent. solution of **Carbolic Acid,** and later, injections of **Fowler's Solution.** With the latter he obtained good results in a patient with an enlarged spleen, the result of malarial fever. Mosler also employed Hamond's method of injection of ergot, and also Jager's processes—simple puncture, electro-puncture, and injections of sclerotic acid. In Jager's case death followed a few hours after the injections of the sclerotic acid. In spite of fourteen punctures and four electro-punctures, no trace of hæmorrhage was found in the parenchyma of the spleen. One fatal case which Mosler had caused him to frame the following rules for the injection of drugs :—

(1,) Only enlarged spleens of firm consistence are suitable, provided these are not accompanied by an extreme degree of anæmia, or by evidences of the hæmorrhagic diathesis.

(2,) Before the injections a prolonged use of drugs is necessary (these drugs are not mentioned by name), in order to act upon the contractile elements of the spleen, and so diminish the amount of blood in the organ, and, as far as possible, to render narrower the lumen of the vessels ; the application of an ice-bag over the spleen is especially useful a few hours after and before the injection.

(3,) Fowler's solution is the most satisfactory drug to inject. Mosler states that he has recently had very good results following on the injections in enlarged leucæmic spleens. In one or two cases in which the disease proved fatal there was shown to be considerable thickening and constriction of the capsule, and Mosler is of opinion that this contraction has a favourable result not only by producing a general lessening in size of the spleen, but also by checking the leucæmic process, thus considerably improving the prognosis.

REFERENCES.—"Lancet," Nov. 8, 1890 ; "Therap. Gaz.," Jan. 15, 1891.

Synopsis.—(Vol. 1891, p. 439.) In leukæmia parenchymatous injections of **Carbolic Acid,** 2% solution, and then a solution of **Liq. Arsenicalis,** 1 part, **Distilled Water,** 10 parts. An **Ice-Bag** is applied to spleen before injection. Injections of **Ergot** and **Sclerotinic Acid.**

Newbouldia Lævis, **Fluid Extract,** ♏15 to 60, in malarial splenitis (p. 42).

SPONDYLITIS, Rheumatic. (See "Orthopædics.")

SPRUE. *Frank J. Wethered, M.D.*

Mr. Charles Begg strongly recommends the use of **Santonin** in sprue. The dose of santonin is the usual one of 5 grains for an adult, and is given in a teaspoonful of olive-oil, well mixed, the first thing in the morning; or if the patient suffers considerably from the effects of the drug, Mr. Begg gives it at bedtime. He considers it most important to exhibit it in the oil, and he gives 1 dose each day for six days. He uses the yellow crystals, having had unsatisfactory results from the white. Mr. Begg points out that although the colour of santonin is said to depend only on the action of sunlight, yet it is a fact that sunlight will no longer act on the drug as at present supplied to us, and his last case was a marked example of the failure of the white and success of the yellow.

Mr. Begg considers that in cases of chronic tropical diarrhœa we are dealing with an alteration in the products of digestion induced by the agency of an organism; that by its action the contents of the bowel are rendered unfit for absorption; and that all the clinical phenomena are but the result of this disorder. He believes that santonin is inimical to the life of the organism, although other drugs may be found to have the same power.

REFERENCES.—"Edin. Med. Journ.," vol. ii., 1890, p. 230; "Pract.," Jan., 1891.

Synopsis.—(Vol. 1891, p. 441.) Santonine, gr. 5, in a teaspoonful of Olive Oil daily, using the Yellow Crystals.

STOMACH (Surgery of). *A. W. Mayo Robson, F.R.C.S.*

Improvements in abdominal surgery have in no case shown more marked advances than in the surgery of the stomach. The treatment of gastric cancer, whether of the cardiac or pyloric ends, was until recent years dietetic and medicinal rather than surgical. The considerable success which has attended the operation of gastrostomy and the improvement in surgical methods generally have emboldened the surgeon to adopt more direct means of relief, or even to make an attempt at cure, by the removal of the disease. According to the position of the new growth, the method of procedure has to be varied. If the disease involve the cardiac end of the stomach, gastrostomy may afford considerable relief, as in a case I reported in the "Lancet" last year, where I adopted the method of loop suture, which I have since employed with equal success.

Dr. Lanenstein[3] holds that a marked distinction should be drawn between cancerous stenosis of the œsophagus and the same disease of the cardiac orifice of the stomach, as in the latter class of cases he

considers gastrostomy is contra-indicated. Dr. D. Von Hacker[17] opposes Lanenstein's conclusions, and gives brief notes of six cases to show that gastrostomy is as favourable in one class of cases as in the other.

Dr. Oscar Witzel[4], of Bonn, describes a recently devised modification of the *technique* of gastrostomy, which, it is asserted, will prevent the escape of gastric juice, which in many instances causes so much trouble after this operation. The object of this procedure is to establish a canal, formed by stitching together the free borders of two parallel folds of the exposed wall of the stomach. This canal extends obliquely from the right downwards and to the left, where it communicates with a small opening made into the interior of the stomach, and an arrangement is thus established which resembles the lower extremity of the ureter as it passes obliquely through the wall of the bladder. It is necessary, in practising this method, to draw a large extent of the anterior wall of the stomach through the external wound. This, it is stated, can be readily effected, when the stomach is collapsed, by gentle and prolonged traction. Two parallel folds following the above-mentioned course are then taken up, the free margins of which are brought together by three or four Lembert's sutures, and by numerous ordinary sutures, over a flexible tube of the thickness of a lead pencil, the lower end of which tube is inserted into the small opening made into the stomach, whilst the upper end is intended to project from the external wound. The canal thus formed, which should be about four centimètres in length, is left exposed at the bottom of the wound when the stomach is fixed by sutures to the margins of the external incision. This modification does not necessitate any change in the other steps of the operation, and the surgeon can make the external wound according to his usual practice. Witzel exposes the sheath of the rectus by an incision made parallel to, and at a distance of a finger's breadth from the margin of the ribs; then, as is done in Mr. Howse's operation, he separates the fibres of this muscle in a vertical direction, and incises the transversalis obliquely from above downwards and from the right to the left. The division of the rectus thus crosses the wounds made through the skin and the transversalis. Witzel, who has operated in the manner described in this paper on two patients, has had good reason, he states, for being well satisfied with the results, and believes that his expectation of establishing a gastric fistula capable of being effectually closed by valvular action has been fulfilled. A similar procedure would, he thinks, be found useful in forming a suprapubic vesical fistula.

M. Jessett[3] modifies the operation by the use of a bone plate on the surface of the abdomen.

Dr. Hartmann[7] describes the following modifications of the operation, as performed by Mons. Terrier: (1,) To pass the sutures which fix the stomach to the external wound under the serous and part of the muscular coat without perforating the mucosa, so as to avoid septic inoculation along the threads; (2,) To make the opening as small as possible; (3,) To drag out the edge of the mucosa and to turn it over and stitch it to the edge of the skin, so that it forms a border around the artificial opening. If this method be practised the surgeon can, it is asserted, complete the operation at once, and without waiting for the formation of adhesions between the two layers of peritoneum.

If the disease involve the body of the stomach to a small extent, partial gastrectomy may be undertaken, and Bonanna[22] has shown by experiments on dogs that it is possible to fill in such a space, if necessary, by grafting into it a portion of the transverse colon. In the human subject it is extremely improbable that this operation will ever be called for, as if the tumour be large gastrectomy will be probably unjustifiable.

Where the disease involves the pylorus there are clearly three courses open, first, complete removal by pylorectomy, with suture of the open end of the duodenum to the stomach. This operation, which has on several occasions been practised on the Continent, I have twice performed[20], once successfully, but it is only feasible when the disease is comparatively limited. Secondly, pylorectomy with closure of the open ends of the stomach and duodenum by invagination and suture, the communication between the stomach and bowel being then effected by gastro-enterostomy. This operation was first performed by Dr. Lawson, next by Mr. Greig Smith[19], and afterwards by Dr. Bull[2] and Mr. Jessett[18], whose successful cases have been fully reported. Thirdly, where the disease is too extensive for removal, or where the patient is unfit to bear the major operation, gastro-enterostomy may be performed, the stomach and jejunum being fixed in apposition by means of Senn's plates, as in a successful case which I reported[1] in May of this year. This operation has been performed successfully by Mr. Kilner-Clarke[6], Mr. Jessett[8], Mr. Stansfield, Mr. Brown, and others, and is, in fact, the operation *par excellence* for cancer of the pylorus.

Mr. Larkin[12] has drawn attention to the occurrence of cicatricial stenosis following gastro-enterostomy, and I think I have seen the same sequela, although I had not the chance of verifying my diagnosis

by autopsy; but one complication I have seen which has not been previously mentioned so far as I am aware, and that is a regurgitation of the intestinal contents through the artificial opening producing fæcal poisoning. If the cancer have involved the stomach so extensively that the patient is unable to retain or assimilate food, jejunostomy may be performed, and the patient may then be fed by peptonized foods introduced directly into the artificial opening in the jejunum. I have performed this operation once, and the patient recovered, returned home, and gained a little flesh: the cancerous disease was of course not arrested, and pursued its usual course.

Stenosis of the pylorus has formed the subject of an interesting monograph by Prof. G. F. Novaro[21].

Not considering especially the procedures which were used in certain isolated cases, as that of Bernay's (gastrotomy with subsequent curetting of the tumour), or Ceccarelli's method (incision of the neoplastic structure, causing the stenosis from within—a form of pylorotomy), and Hahn's procedure (intubation), we possess, at present, four different methods of operation, viz., digital dilatation (Loreta's method), pylorectomy, pyloroplasty, and gastro-enterostomy. Digital dilatation, if practicable, is certainly the simplest procedure. The great mortality (40 per cent.) does not recommend this method, but the author thinks if this mode of interference will be properly limited to those cases in which the stenosis depends upon hypertrophy of the muscular layer or spasms of the latter in the pyloric region, its results are sure to improve.

Pylorectomy is, without doubt, the most radical procedure. The development of stenosis, after the performance of this operation, has been observed only in a few cases. That the results are often unfavourable is due to the fact that this operation is performed more frequently than indicated. The operation should only be done in those cases of carcinoma in which the tumour encroaches not too much upon the stomach, little or not at all upon the duodenum, and where it forms no adhesions with the pancreas, the liver, or colon. Moreover, in the cases where this operation is indicated, one should be able to lift the tumour out of the abdominal cavity, and one should not find nodules in the walls of the stomach or on the surface of the liver, nor enlarged and indurated glands in the proximate surroundings. The use of this operative measure in stenosis caused by simple gastric ulcer should be limited to those cases in which the ulcer is not yet in the healing stage, or where it (the ulcer) is of suspicious character (carcinoma), or where there exists simultaneously a polypus degeneration of the mucous membrane of the pylorus. Pylorectomy may also

be employed in cases of callous cicatrix, where fibrous cancer is suspected. Even in the above enumerated cases, except in carcinomatous ulcers and callous cicatrices, partial resection may be sufficient.

Resection is always more difficult and more tedious than pyloroplasty according to Heincke—Mikulicz's method. This latter has been employed since 1886 in eleven cases, and yielded only two deaths (18 per cent. mortality). It may be practised successfully in most cases of cicatricial stenosis, either alone or combined with partial resection. If stenosis of the pylorus or the duodenum be in question, and where the parts involved are inaccessible on account of the adhesions, then gastro-enterostomy must be resorted to. This latter is not entirely without danger, but may, in cicatricial stenosis, bring about a cure, and in malignant neoplasms will afford considerable relief to the patient.

The author gives a review of fifty-five cases of gastro-enterostomy, in which Wölfler's or Hacker's modification was used, with twenty-four deaths (43·63 per cent. mortality). Among these cases were twelve of cicatricial stenosis which were operated on by Wölfler's method only, with two deaths (16·66 per cent. mortality). The same procedure used in carcinoma yielded a mortality of about 51 per cent. The writer (on page 19 of his work) refers also to the method recommended by Vogt, which consists in severing the continuity of the small intestine, fixation of the efferent part to the stomach, and attaching of the afferent part to the efferent somewhat below its fixation to the stomach. He thinks that this procedure is rather complicated and prolongs the duration of the operation.

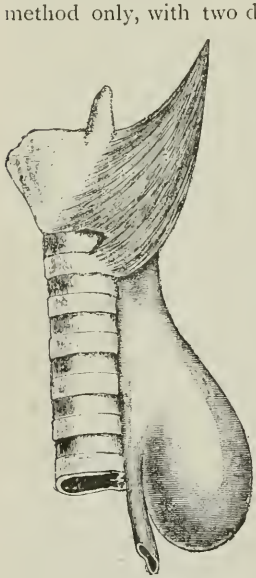


Fig. 34.

Dr. Postempski[24] records a case which proves that Mikulicz's operation is an efficient method of treating cicatricial stenosis of the pylorus.

Dr. J. W. Taylor's[10] case apparently shows how kinking of the junction of the stomach and duodenum may produce all the symptoms of stenosis and how it may be cured by laparotomy.

Mr. Whitehead's case of diverticulum of the œsophagus causing obstruction and its

relief by gastrostomy, which prolonged life for six years, is of extreme interest. The illustration (*Fig.* 34) is copied from Mr. Whitehead's paper[16].

Dr. Lowson's[14] case of gastrotomy for the removal of a skewer from the stomach of a lunatic is of interest, not only because of the success of the operation, but from the difficulty which would have attended the diagnosis but for the skewer having penetrated the thoracic wall.

Ulcer of Stomach.—Drs. Dickinson and Ewart's[13] cases of gastric ulcer, with supposed peritonitis and supposed pneumothorax, really due to perforation and localized peritonitis, Dr. Sainsbury's[22] case, simulating pyloric cancer, and Dr. Saundby's[15] case, resembling biliary colic, prove that the diagnosis of ulcer of the stomach is not yet perfect.

Nissen[9] failed to find the perforation in a case in which he opened the abdomen, the reason being that the ulcer was situated posteriorly: he argues, therefore, that in other cases the lesser omentum should be torn through and the back of the stomach examined.

Dr. Saundby's[15] treatment of ulcer of the stomach is best given in his own words: "As a general rule, I order at first ½ an ounce of milk and lime-water every hour as the only food, with the sulphate of iron and magnesia mixture in purgative doses three times a day. Ziemssen and Leube use sulphate of soda or Carlsbad salt in purgative doses, with the object of removing all remains of food from the stomach; but I use this mixture simply to remedy the anæmia and constipation so generally present. If hæmatemesis actually occurs, or the patient is admitted with a very recent history of it, I order ice to suck, and feed per rectum for a day or two, and then proceed as before. When, as usually is the case, vomiting and pain cease under this treatment, I double the allowance of milk and lime-water, then change the diet to soft bread-and-milk, getting on through pounded chicken and custard and eggs to ordinary diet as rapidly as possible. The good results are attested by the table. It may be objected that these cases are not cured, but that there is only a temporary remission of the symptoms. I do not think this is true, although one case did undoubtedly relapse three times, as all these patients were made out-patients under me, and attended for a longer or shorter time, continuing to take the medicine. Had they relapsed it is most probable they would have reapplied for admission to this hospital, where, according to the rules, they would have been placed under my care. It may be thought that there is danger by this plan of exciting hæmorrhage or causing perforation, but I think this fear is sufficiently answered by the record."

REFERENCES.—[1]Mayo Robson, "Lancet," May 23, 1891; [2]Bull, Supplement "Brit. Med. Journ.," April 18, 1891; [3]Lanenstein, Ibid., July 25, 1891; [4]Witzel, Ibid., Sept. 5, 1891; [5]Wyeth, Ibid., April 4, 1891; [6]T. Kilner Clarke, "Brit. Med. Journ.," April 11, 1891; [7]Hartmann, Supplement "Brit. Med. Journ.," June 27, 1891; [8]F. B. Jessett, "Brit. Med. Journ.," June 27, 1891: [9]Nissen, Supplement "Brit. Med. Journ.," Jan. 3, 1891; [10]J. W. Taylor, "Lancet," May 2, 1891; [11]Hale White and Arbuthnot Lane, Ibid., Feb. 21, 1891; [12]F. C. Larkin, Ibid., Oct. 3, 1891; [13]Dickinson and Ewart, Ibid., March 7, 1891; [14]Dr. Lowson, Ibid., Jan. 31, 1891; [15]Robert Saundby, Ibid., Feb. 14, 1891; [16]W. Whitehead, Ibid., Jan. 3, 1891; [17]D. Von Hacker, Supplement "Brit. Med. Journ.," Oct. 17, 1891; [18]F. B. Jessett, "Lancet," Oct. 24, 1891; [19]Greig Smith, Ibid., Nov. 7, 1891; [20]Mayo Robson, Ibid., Nov. 14, 1890; [21]G. F. Novaro, "Ann. of Surg.," March. 1891; [22]Sainsbury, "Lancet," Jan. 3, 1891; [23]Bonanna, "Ann. of Surg.," Nov., 1891; [24]Postempski, Ibid., Nov., 1891.

STRYCHNINE POISONING. *Frank J. Wethered, M.D.*

Martinez records a case of a man, aged twenty-eight, who was seen about a quarter of an hour after he had taken strychnine, with suicidal intent.

The treatment consisted in the hypodermic injection of 15 minims of **Chloroform**, followed by washing out of the stomach. Recovery ultimately followed, and Martinez believes that, although at one time bromide of potassium and chloral hydrate were freely used, the chloroform was the principal agent in bringing about the satisfactory result.

REFERENCE.—"Pract.," Dec., 1890.

SUPRARENAL CAPSULES (Tuberculosis of).

Frank J. Wethered, M.D.

The pathological condition most characteristic of Addison's disease is an alteration in the suprarenal capsules, which is now generally accepted to be tubercular in nature.

MM. Alegias and Arnaud publish an interesting summary of our knowledge upon this point under the following headings :—

(1,) *Pathological Anatomy.*—These organs, in Addison's disease, are generally increased, rarely diminished, in size, of a greyish-white colour, most often indurated, but sometimes soft and even fluctuating in parts; they have been known to have been converted into a bag of pus. They are adherent to adjacent organs. On section there is no distinction between cortex and medulla. They may be wholly converted into a translucid material, or caseating foci may be present.

The lesion is tuberculous ; the bacilius of tubercle has been repeatedly demonstrated in it. It is made up more of a general infiltration than of single grey granulations. Fibro-caseous or calcareous change takes place ; rarely ulceration. It may begin in the cortex or medulla, less often in the fibro-vascular zone surrounding the capsule. This zone may be involved secondarily. Tubercle has been found in the suprarenal bodies in cases of phthisis without and with symptoms of Addison's disease. The authors then record seven cases of tuberculous disease of the suprarenal bodies, three being without symptoms of Addison's disease. No tubercle was found in the fibro-vascular zone or outer fibrous envelope in the three last cases.

(2,) *Pathological Physiology.*—All diseases of the suprarenal capsules do not cause Addison's disease. Again, a lesion in these capsules—nearly always tuberculous in nature—is almost constantly found in cases of Addison's disease. There are two theories to explain Addison's disease : the one which may be called capsular insufficiency, the other attributing the disease to a nervous origin. The latter is the more reasonable. It has at any rate been shown that the sympathetic ganglia and plexus may be involved in the same morbid process as has already destroyed the capsule. But such changes are not constant enough to base a theory on. The authors have found ganglia in the pericapsular tissue, and most abundantly on the posterior aspect of the gland. These glands are themselves surrounded by a capsule. MM. Alezais and Arnaud believe that the real cause of Addison's disease lies in these ganglia. The tuberculous infiltration leads to their destruction.

REFERENCE.—Supplement to "Brit. Med. Journ.," May 9, 1891.

SYCOSIS. (See also "Eye.")

Synopsis.—(Vol. 1890, p. 472.) In acute cases with much pustulation, epilate, or curette, and apply **Boric Acid Ointment**, or **Lassar's Paste** with **Salicylic Acid** ; **Calcium Sulphide**, gr. $\frac{1}{10}$, in fresh tablet triturates every two hours internally ; in subacute cases where disease is more patchy, epilate or curette, and use **Bronson's Ointment** (Hydrarg. Ammon. ʒj, Hydrarg. Chlor. Mitis ʒij, Vaselini ʒj), or one of **Sulphur, Tar,** or other mild stimulant ; or use soap frictions followed by protective ointments. In chronic cases, epilate or curette, or apply a solution of **Caustic Potash** carefully, and then use a soothing dressing ; **Tar in Alcohol** has given good results in some chronic eczemas ; **Soap Frictions** are also useful in these chronic cases ; the affected area should be shaved to allow of the application of remedies ; in severe cases a **Carbolic-Mercurial** or a **Resorcin Plaster** muslin should be constantly worn. Where treatment can only be carried on at night, apply a **Zinc Sulphur** muslin at night and in the morning ; epilate diseased follicles, and touch them individually with a 5% **Resorcin Spirit**. For sycotic catarrh use nasal douches of **Ichthyol Solution**, 1% twice daily : over-fatty **Soap** should be used as prophylactic for washing and shaving, and fresh points of

suppuration should be treated by epilation and cauterizing with a pointed rod dipped in **Corrosive Sublimate Paste**, or the 5% **Resorcin Spirit**; nightly inunction of a weak **Resorcin** or **Sublimate Vaseline**, when the beard is worn, or a correspon ling paste (if the patient shaves) should be used.

(Vol. 1891, p. 445.) ℞ Hydrarg. Sulphureti Rubri 1·0; Sulphuris Sublimate 24·0; Adipis 75·0; Ol. Bergamoti gtt. aliquot. Applied for all pustular affections of hair and beard. If much inflammation or eczema be present, Brooke applies lukewarm poultice of **Starch Paste** ℥j, **Boracic Acid** gr. 30. To be changed thrice daily; epilation and shaving; and as ointment, ℞ Hydrarg. Oleatis 2½% ℥j, Amm. Sulphoichthyolici ♏20, Ac. Sali yl. gr. 10, Ol. Lavandulæ gtt. 2, M. Ft. Ung. Rosenthal advises **Epilation** and **Shaving**, and an ointment, ℞ Ac. Tannic gr. 15, Sulphur gr. 30, Vaseline ℥v, rubbed in twice or thrice daily, and at night a Salicylic Acid paste or Hebra's or Wilson's ointment, or the following both for day and night: ℞ Ac. Tannic, gr. 75; Sulphur, ℥ijss; Oxide of Zinc and Starch, āā ℥iss; Vaseline, ℥iss, M.

Hydroxylamin, ℞ Hydroxylamin Muriat. 2 to 5; Sp. Vin. Rect. 100; Calc. Carbon. q.s. ad neutr. Apply with a brush in parasitic sycosis (p. 34).

SYPHILIS. *J. Hutchinson, Jun., F.R.C.S.*

The chief points in the treatment of syphilis are given in two lectures by Mr. Hutchinson. The lecturer notes that there were scarcely any anti-mercurialists left in this country, except in Edinburgh, and it is a curious fact that of late years some of the worst cases of syphilis under his observation had come from Edinburgh and had been treated in the early stages by systematic abstention from mercury. That it is now possible in a case of characteristic hard chancre to wholly prevent the occurrence of secondary phenomena is generally admitted by those who have seen the results of a carefully administered course. This alone is not, however, sufficient, as the most dangerous symptoms of syphilis are encountered during the tertiary stage. But the power of a prolonged mercurial course in preventing any tertiary phenomena is equally marked. Prof. Fournier, than whom there is no higher living authority, states that of those patients thoroughly treated by mercury during the first two years following infection only 5 per cent. to 10 per cent. ever develop tertiary symptoms. This very small proportion will certainly strike many as being too low, and some fallacies underlie the statistics on which it is based.

Hydrargyrum c. Cretâ gr. j, in pill, with a little Dover's powder, is the form of mercury strongly recommended by Mr. Hutchinson. Green vegetables and any other article of diet likely to cause diarrhœa must be avoided whilst taking the drug, and stimulants and smoking must as a rule be forbidden. For those few cases in which even small doses of mercury produce debility and neuralgic pains, it may be necessary to add quinine and iron. Not a few patients, especially those previously liable to headaches and bilious symptoms, are

actually improved in health by the prolonged use of mercury, and one great advantage of the method of administration just mentioned over inunction, for example, is that no interruption to business need be enforced.

Whilst it is universally admitted that tertiary syphilis is now (thanks partly to the introduction of the iodides into its treatment) of a much less severe type than in former times, the close relationship of locomotor ataxia, general paralysis of the insane, and some other nervous diseases to syphilis is becoming yearly more certain. Mr. Hutchinson believes that sexual over-indulgence and fatigue are equally important in leading to the nerve-degeneration as syphilis—both factors contributing their share. The rarity of tabes dorsalis in women perhaps points in this direction.

The question not infrequently arises as to the advisability of admitting those who have suffered from syphilis in insurance offices, and Mr. Hutchinson on this point arrives at the following conclusions: (1,) Patients suffering from active secondary syphilis should be made to wait until the symptoms have disappeared. This is mainly in order to ascertain whether they bear mercurial treatment well and are careful in carrying it out; (2,) In the later stage of syphilis, provided no severe lesions have developed and treatment has been efficiently undergone, the life may be regarded as a good one *quâ* the risks from the syphilis; (3,) If severe bone-disease or other tertiary symptoms are present, of course no insurance office would care to take the risk.

When the mucous membranes—especially those of the tongue and mouth, have been severely affected, the possible supervention of cancer must be considered.

During a prolonged course of treatment with **Mercury** or **Iodide of Potassium**—particularly the latter—great care must be used to avoid the depressing effects which may result from the drug. "Profound forms of neurasthenia exist that are due to the abuse of specific treatment and to no other cause. The headache, vertigo, loss of memory, change in character, etc., are too often set down to cerebral syphilis. The unwary practitioner increases the doses, with disastrous results. It is impossible to exercise too great vigilance in this matter."

Mr. Hutchinson observes that "the number of persons to whom iodide of potassium is a distinct depressant, and who are always low-spirited and miserable when under its influence, is very large. My impression is that many of these are permanently damaged in their nerve-tone by its continued use." It is considered by many authorities that the combination of iodides of sodium and ammonium with the

potassium salt is of special utility, and there is no question that the addition of aromatic spirit of ammonia to the iodide is efficacious in preventing to some extent the depressing influence of the latter drug.

A curious result of the internal administration of iodide of potash has been noted by Dr. G. H. Temple, namely, the secretion of reddish sweat, with a similar discolouration of the hairs. The patient was an elderly man, who was taking 30 grains daily, and it was not until the drug had been left off for some weeks that the hair regained its original colour.

Reports of the trial of several new preparations of mercury by the method of *subcutaneous injection* come from abroad. By one writer the succinimide (in daily doses of $\frac{1}{3}$ of a grain) is vaunted; by another the oxybenzoate, by a third the alaninate, the formamide, etc. In fact, it would seem as though all the possible combinations of mercury will be exhausted before long. As the hypodermic method is but little likely to come into vogue in treating syphilis in this country, it would be a waste of time to discuss the relative advantages of the various salts further than has been done in previous volumes of the "Medical Annual."

In the treatment of infantile syphilis inunction is widely employed, and a mixture of equal parts of lanoline and the ung. hydrargyri answers well. Wiederhofer, of Vienna, praises a preparation of 1 part of red oxide of mercury to 100 of lanoline.

When the child is several months old, mercury and iodide of potassium may be given with advantage by the mouth, so long as due care is taken as regards the appropriate dose.

The Germ Theory of Syphilis.—An interesting paper on the germ theory of syphilis from a clinical point of view, by Mr. C. Mansell Moullin, is contained in the "Archives of Surgery," June, 1891. The writer endorses the widely held belief in the presence of a specific microbe, but this solely from a consideration of the clinical features of the disease and in spite of the at present very contradictory results of laboratory investigations. He is also in favour of Finger's explanation of immunity from infection after the primary stage, and of the immunity of the mother of a syphilitic fœtus (Colles's law) by means of some chemical product of the bacillus.

Von Marschalko states that a bacillus can be demonstrated in hard chancres and some secondary lesions by means of staining for thirty-six hours in an alkaline solution of methyl blue and counter-staining with vesuvin. This bacillus is said not to be found in soft chancres.

Extra-genital Infection with Syphilis.—A contribution to this important subject is made in the "Lancet," Oct. 25, 1890, by Mr.

Arthur Cooper, who narrates five cases of primary chancre on the nose, lip, tongue, etc. Examples of these unusual methods of contracting syphilis have probably been observed by every surgeon in considerable practice, and they are specially interesting from two points of view : (1,) The primary sore on the face, fingers, etc., may be very unlike the characteristic hard chancre on the penis, and the accompanying bubo is not uncommonly attended with marked inflammatory symptoms—hence mistakes in diagnosis ; (2,) It is worth while remembering such sources of syphilis when the absence of any history of venereal infection puts the surgeon in doubt as to the specific character of a lesion which he would otherwise have treated as syphilitic.

I have personally observed cases of primary chancres in young children from infection during circumcision : chancres of the lips, tongue, eyelids, fingers, and two cases of primary ones in very remarkable positions—the occiput and the heel. In the two latter cases there was but little doubt that infection was conveyed to small wounds by means of dressings.

The two remarkable outbreaks of syphilis from tattooing amongst soldiers lately reported by Surgeons Barker and Whitehead, may be remembered. In one, twelve out of twenty-three soldiers who were tatooed by the same operator developed syphilis by this means.

Aristol in the Treatment of Venereal Diseases.—This drug has been employed by many observers as a local application for soft and hard chancres, with, on the whole, not very favourable results. In its favour is the absence of smell, which is such a drawback to iodoform, but it appears to have but feeble antiseptic powers, and is an expensive application. Prof. Breda, of Venice, reports well of it, both from its freedom from irritating effects and its healing properties ; other surgeons have seen only negative results.

REFERENCES.—Hutchinson, "Pract.," June, 1891 (Lectures on the Treatment of Syphilis) ; "Pract.," May, 1891 (Treatment of Infantile Syphilis) ; "Hanika, der ærztliche Praktiker," No. 11, 1891 (Treatment of Gonorrhœa); Jullien, "Annales des Maladies des Organes Génito-urinaires," April, 1891, p. 274 (Incision of Chancres); Jullien, "Semaine Médicale," May 16, 1891 (Hypodermic Injections of Corrosive Sublimate for Gonorrhœal Rheumatism); Burghard, "Lancet," May 23, 1891 (Methyl Violet in the Treatment of Gonorrhœa, etc.) ; Finco, "Gazzetta Medica Lombarda," June 20, 1890 (Corrosive Sublimate in Collodion as a Local Application for Condylomata) ; Strain, "Glasgow Medical Journal," Feb., 1891 (Syphilis and Marriage, etc.) ; "New York Med. Journ.," March 7, 1891.

Synopsis.—(Vol. 1890, p. 473.) For mercurial administration hypodermically, the **Yellow Oxide** and the **Salicylate** are best, mixed with **Paraffin** or suspended in **Mucilage**; **Chromic Acid**, grs. v to xx to ℥j, as a local caustic; **Acid Nitrate of Mercury** is as effective and a safer caustic; in tertiary nerve disease, **Mercury** is better than **Iodides**. ℞ Hydrarg. Bichlor. gr. $\frac{1}{12}$, Tinc. Ferr. Perchlor. ♏vj, Glycerini ♏xxv, Ol. Caryophylli ♏j, Syrupi ad ℥j; to be taken after meals. In acute and chronic urethritis, **Sulphate of Thallin**, 1 to 2% solution, as injection, also the **Salicylate of Mercury** as follows, ℞ Hydrargyri Salicylatis gr. $\frac{1}{4}$, Sodæ Bicarb. gr. iij, Aq. Dest. ℥j; or **Sulphocarbolate of Zinc** injection, thus, ℞ Zinci Sulphocarbolat. gr. ij to v, Glycerini ℥j, Aq. Dest. ℥j. **Corrosive Sublimate** injection, 1 to 20,000, used from the very first day; Zeissler's method of filling the urethra with an antiseptic powder (**Boracic Acid** either alone or mixed with **Sulphate of Alum, Subnitrate of Bismuth**, etc.), introducing it through a cannula which is passed as far as the membranous urethra and slowly withdrawn while the powder is forced out; the bladder is emptied and the urethra washed out before the operation, which may be done under **Cocaine**; it may be repeated a few times, and an astringent injection used at the end of a week or two. In gummata of the nervous system, **Iodide of Potash**; in syphilitic inflammation, **Mercury** by inunction.

(Vol. 1891, p. 448.) For hypodermic use **Hydrarg. Bichlor.** gr. $\frac{1}{12}$ to $\frac{1}{8}$, dissolved in 10 drops of **Water**, and if the strength is much reduced, **Quinine**, gr. 15 to 20 daily may be used simultaneously.

Hydroxylamin: ℞ Hydroxylamin Muriat. ·2 to ·5, Sp. Vin. Rect. 100, Calc. Carbon. q.s. ad. neutr. (p. 34). Applied with a brush in syphilitic skin diseases. **Aristol** externally applied has proved useful in chancre, syphilitic ulcers of leg and nose-pharynx, for moist condylomata and suppurating gummata, either as powder, 1 part to 10 of **Zinc Starch** or dissolved, 1 part to 10 of **Ether** or **Collodion**, or combined with **Lanoline** or **Vaseline** (p. 11).

TÆNIA.

Synopsis.—(Vol. 1891, p. 451.) **Areca Nuts**, gr. 60 to 120, using a purgative about an hour afterwards (p. 10).

TETANUS.

Græme M. Hammond, M.D., New York.

Dr. Francisco Pirroni[1] relates the case of a lad, seventeen years of age, who complained one day of severe pain in the right arm and right side of the neck, together with some difficulty in opening the mouth. The next day there was decided trismus, followed by rigidity of the nape of the neck. A splinter of wood was ound in the right thumb. It was covered with earth mixed with manure. Opisthotonos was induced by the slightest noise. Treatment by bromide of potassium and chloral and hypodermic injections of morphia having proved futile, Baccelli's method of injecting **Carbolic Acid** was tried. From six to ten Pravaz syringefuls of a 1 in 20 solution were injected daily, and carbolic acid was also given internally until the urine became black, nor was the treatment discontinued on that account. The patient improved somewhat. The internal administration of **Acetanilide** was then tried, alternating every two days with the carbolic acid. The effect of the acetanilide was marked from the very first

doses, which varied from 25 to 40 centigrammes every three or four hours. In four weeks after the onset of the disease the patient was able to leave his bed and walk a few steps if supported.

Bertini[2] also reports a case of traumatic tetanus cured by injections of **Carbolic Acid**. In fifty days, forty-nine injections of a 2 per cent. solution of carbolic acid were given.

Dr. Baginsky[3] reports a case of *trismus neonatorum* treated after the method proposed by Behring and Kitasato, that is, by injections of the blood-serum of a rabbit which had previously been made "tetanus-immune."

Dr. Baginsky's patient was a female infant, nine days old. The first symptom observed was difficulty in sucking. This was followed by tension in the face and in the upper muscles of the trunk, then by lock-jaw, and finally the extremities became affected. Dr. Kitasato carried out the treatment. One-tenth of a cubic centimètre of blood-serum of a tetanus-immune rabbit was injected, and in the following three days five more injections were given. In all, 1·5 ccm. of the serum were used. The child died on the third day without any amelioration of the spasm having been observed. Dr. Baginsky believes the dose used was too small to be effective.

Mr. Maylard[4] reports the case of a boy, fourteen years of age, who, seven days after running a rusty nail into his foot, began to feel severe pain in the calf of the leg. Three days later he developed stiffness about the jaws, the risus sardonicus appeared, and every few moments there was an opisthotonic spasm. He was able to swallow. He was treated with **Chloral Hydrate**, the drug being pushed to almost a dangerous degree. He developed a chloral rash, and had epileptiform attacks. Within the first three days he had two hundred and fifteen spasms, the greatest number in one day being eighty-two. When the chloral was first given he took in one day 4½ ounces of the syrup, which is equivalent to ¾ of an ounce of chloral hydrate. In three days he took 1¾ ounces of chloral. The total amount administered during his illness was 5 ounces, 5 drachms, and 20 grains. The boy entirely recovered.

Verneuil[5] explains the association of gangrenous septicæmia with tetanus by showing that cultivated soil not only contains Nicolaier's tetanus bacillus, but also the septic vibrio of Pasteur. He reports several cases of these two affections occurring simultaneously in the same individual.

REFERENCES.—[1] "Brit. Med. Journ.," March 7, 1891; [2] "Nouveau Remèdes," March 8, 1891; [3] "Berlin. klin. Woch.," No. 7, 1891; [4] "Pract.," 1891; [5] "Lond. Med. Recorder," Dec. 20, 1890.

TETANUS (Surgical Prophylaxis of). *F. S. Eve, F.R.C.S.*

Prof. G. Sormant, from an investigation on this subject, comes to the conclusion that **Iodoform** is one of the most active and specific disinfectants against the tetanogenic virus. In a subsequent work he gives the results obtained by experiments with other chemical substances to neutralize this virus. His conclusions are : (1,) Camphor and camphorated alcohol have no germicidal action ; (2,) **Chloral** shows itself active in the neutralization of the tetanogenic virus ; (3,) **Chloroform** and **Chloral Hydrate** exercise an attenuating action in a variable degree, retarding more or less the development of the cultures, and also rendering some cultures sterile.

As regards the surgical prophylaxis of tetanus the author, from the observation of two clinical cases, comes to the following conclusions : (1,) If tetanus is already established the application of iodoform is no longer efficacious to arrest it ; (2,) Nevertheless the same remedy will completely neutralize the virus in the wound.

The author has also made experiments as to whether it was possible to arrest the development of tetanus during the period of incubation by the use of iodoform, and has, in regard to this, arrived at the following conclusions : (1,) In the animals in which local prophylaxis was carried out by the use of iodoform early after infection had taken place, and where the tetanic manifestations had not yet developed, the convulsive period could be prevented ; (2,) If the first symptoms of the disease had already developed, there was the less chance of success the later one acted.

REFERENCE.—"Riforma Medica ; Gazzetta degli Ospitali," Aug., 1890.

Synopsis.—(Vol. 1890, p. 478.) **Calabar Bean, Chloral,** and **Chloroform** in the first stage and at the crisis ; **Bromides** and **Salicylates** in the declining stage ; **Perfect Rest, Quiet,** and **Liquid Nourishment** ; if the pains are intense, **Ergot** and **Powdered Belladonna** may be used. To destroy bacilli in their nidus, deep excoriations have been used and the place washed with 5 to 10% of **Sublimate,** or it may be cauterized with **Nitric** or **Sulphuric Acids** ; **Purgatives** and **Diaphoretics** have been recommended to eliminate the poison and sedatives ; injection of **Muriate of Pilocarpine** has proved successful.

THROAT.

Synopsis.—(Vol. 1890, p. 136.)—**Tinct. Jaborandi,** ♏30 t.d.s., has given relief for dry throat.

(Vol. 1891, p. 455.) ℞ Fl. Ext. Pyrethrum ♏2 to 3 ; Pilocarpine Hydrochloride, gr. ½ ; Ext. Licorice Pur. gr. 2 ; Acaciæ Pulv. gr. 2 ; Glyc. ♏j ; Sacch. ad. gr. 20, Ft. Troch. Sig. One every two, three or four hours, to relieve dryness of mouth and throat.

TIC DOULOUREUX (Pathological Anatomy).

Græme M. Hammond, M.D., New York.

Dr. C. L. Dana[1], in an admirable paper on this subject, while admitting that inveterate trigeminal neuralgias were usually caused by local disease, such as bony tumours, aneurysms, or syphilitic exudations, claims that the ordinary cases of tic douloureux occurring after middle life, affecting chiefly the second branch of the trigeminus, were not due to such causes. Nor does he believe that neuritis and degenerative changes in the nerve are the usual and ordinary conditions in tic douloureux, for in very few cases, even in those of long duration, is there any permanent anæsthesia.

The author's proposition is that many cases are due to an obliterating arteritis of the nutrient vessels of the nerve. His reasons for this view are: (1,) That the disease begins at that time of life when degenerative change in the arteries begins; (2,) That it affected chiefly and primarily one of the terminal branches of the internal maxillary. If it extended it involved the inferior dental. It rarely affected the supra-orbital nerve, which is supplied by a branch of the internal carotid. Hence the disease followed a certain fixed vascular distribution; (3,) That he had examined four superior maxillary nerves removed from typical cases of tic douloureux; in none were there any noteworthy changes in the nerves. In three of them striking evidence of arterial disease was found. In the fourth specimen no blood-vessel was present; (4,) The author's view was strengthened by therapeutical experiment: glonoine, aconite, and potassium iodide, which were such excellent remedies in this disease, all lowered the blood tension; (5,) Removal of the peripheral nerves sometimes cures the disease entirely, hence the disease is often peripheral, and due to some local peripheral irritation; (6,) Certain authors had recently shown that a much closer and more extensive relationship exists between the nerve-trunks and the blood-vessels than has hitherto been known, and had suggested that disturbances in blood supply might be a serious factor in causing neuralgia.

REFERENCE.—[1] "New York Med. Journ.," Jan. 10, 1891.

TINEA TONSURANS.

Synopsis.—(Vol. 1890, p. 481.) Shave the hair, wash with warm water and the over-fatty **Potash Soap**, and the following ointment worked well into the affected parts by the aid of a brush with stiff short bristles, ℞ Sulph. Præcip. ℥j, Hydrarg. Ammon. ℥ss, Thymol. gr. x, Vaselini ℥j, Ung. Simp. ad ℥j, M. Some **Carbolic Glycerine** is smeared over this, and the application is repeated daily.

TINEA TRICHOPHYTINA. *T. Colcott Fox, M.B.*

The search for new and efficient remedies, and more effective methods of applying old ones, continues with unabated vigour, but as Besnier, amongst other writers of experience, points out a rapid method of cure cannot be achieved by simple parasiticide effects owing partly to mechanical difficulties in reaching deep-seated fungus, and partly to the peculiar conditions, as yet not well understood, in which the fungus thrives in the hair. Laboratory experiments tell us that there are many substances and methods which should be effectual, but in practice we find they all fail to act rapidly.

Ciarrocchi, of Rome, employs **Electric Cataphoresis** with good results. A 1 per cent. solution of corrosive sublimate is used in connection with the anode. Reynolds, of Chicago, fixes on the positive electrode a sponge wet with a 1 per cent. solution of bichloride of mercury and finds that, if pressed on the patches of ringworm, it will soak in very deeply. Marianelli treated eighteen cases by **Unna's Method** with very unsatisfactory results, except in one case.

Bertarelli prefers the **Pitch Plaster** to all other methods, and says patients find this method of epilating less painful than with the forceps, and more effective. His plaster is composed of 30 parts of Burgundy pitch (résine de pin), 8 parts of black pitch (pix navalis), 2 parts of Venetian turpentine, and 1 part of lard, spread upon small strips of linen. This is applied after removal of scales and crusts by free use of grease and lead plaster. The strips of plaster are raised one after the other after a day or two, and epilation supplemented by the forceps. The scalp is then washed with soap and water, or bathing in bichloride or Lugol's solution. The pitch plaster is again applied till the whole scalp is enveloped. The treatment must be continued for six to twelve months. All the physicians at the Hôpital St. Louis in Paris, have devised elaborate methods of treatment but these require specially competent attendants, and daily attention either in a hospital or elsewhere. Besnier recommends the following procedure for those who cannot be in a hospital. Cut the hair close and keep it so. Separate, till a cure is effected, all the diseased patches by a zone of epilation. Smear the patches with vaseline, and curette, or scrape out all the diseased hairs, the first time gently, and on a second occasion forcibly after washing with chloroformed boricated alcohol. Then apply the same lotion, but with a little ball of sterilized cotton impregnated with Van Swieten's liquor acidified with acetic acid. The head is then covered with the acetic Vigo's plaster. This treatment is to be repeated daily.

REFERENCES.—Kaposi's "Lectures," 2nd ed., by Besnier and

Doyon, 1891 ; Bertarelli, quoted in "Ann. de Derm. et de Syph.," 1890, vol. i., p. 596 ; Marianelli, "Giorn. Ital. delle Mal. vew. e. della pelle," 1890, No. 4 ; Ciarrocchi, "Gaz. Med. di Roma," Sept. 1 and 15, 1890.

Synopsis.—(Vol. 1891, p. 456.) Aristol, 5% dissolved in Olive Oil and mixed with Vaseline, applied twice daily to the shaven head after washing with Soap. Hutchinson uses first Liq. Carbonis Detergens, a teaspoonful to a pint of Hot Water as a wash for the scalp twice a week, removing all scales and crusts ; cut and shave hair and apply at night ℞ Ac. Chrysophan. ʒj, Hydr. Amm. Chlor. gr. 20, Lanolini ʒj, Adip. Benzoat. ʒvj, Liq. Carb. Deterg. ♏x, M. For kerion, epilation and use of a strong evaporating lotion, *e.g.*, Lead and Spirit, Oils and Pomades seem to be prophylactic. Dockrell advises Hydronaphthol, shaving head and washing with 5% Hydronaphthol Soap and Water as hot as can be borne ; dry and apply strips of 10% Hydronaphthol Plaster to and beyond the affected area, and outside the margin a layer of Hydronaphthol Jelly, 10% is painted ; in four days a 20% plaster is substituted and then the 10% again. Simultaneously a 5% Ointment is applied to unaffected portions of the head night and morning. Unna advises ℞ Chrysarobini 5·0, Ac. Salicyl. 2·0, Ichthyolis 5·0, Ung. Simp. ad. 100·0, M. A circle of Zinc Glycerine Jelly is painted round the head to limit action of the acid and prevent conjunctivitis, and Gutta Percha Tissue is used as a cap. In four days' time Ichthyol Ointment, 5% is substituted for Chrysarobin.

Hydroxylamin watery solution, 1 to 1000 as compress after scales are removed by bathing, rubbing with Green Soap and applications of 10% Zinc Salve, gradually increasing strength of solution (p. 34).

TINEA VERSICOLOR. *T. Colcott, Fox, M.B.*

The disease is easily cured if the treatment be persistently carried out, but relapses are very frequent owing to re-infection from the clothes, and failure to eradicate the fungus from the mouths of the follicles. The production of desquamation will mostly remove the disease, apart from the use of a parasiticide. Small patches may be treated by rubbing in tinctura iodi. Tilbury Fox recommends scrubbing the skin, macerated in a warm bath, with soap, and after drying, the application of firstly, dilute acetic acid or vinegar, and, secondly, Lot. Sodii Hyposulphitis (1 in 8). Besnier advises thorough washing in warm water each morning, and on retiring at night friction with an ointment composed of resorcin and salicylic acid, of each 15 to 45 grains, precipitated sulphur, 75 to 225 grains, of lanolin, vaseline and lard, equal parts, 375 grains. This treatment, if too great irritation is not produced, to be carried out for a week, and the clothes to be disinfected. McCall Anderson suggests thorough friction night and morning, with an application composed of :—

℞ Perchloride of Mercury	℈j	Rectified Spirit	ʒij
Green Soap	ʒiij	Oil of Lavender	℈j

The parasiticides recommended for ordinary ringworm are also effectual.

TONGUE (Eczema of).

Synopsis.—(Vol. 1891, p. 459). Internally the use of Thermal Waters with Alkalies, avoiding arsenical preparations. Constipation must be treated. For gastric neurasthenia and dilatation a solution of Naphthol combined with Salicylate of Bismuth is useful for irrigation. Remove or file down decayed teeth. Avoid condiments and tobacco. Boracic Acid, Sulphur, Hyposulphite of Soda, Lactic Acid, solution of Resorcin, are useful topical remedies. If the tongue is very sensitive, solution of Cocaine, 1 to 40, or Salicylic Acid, 1 in 25, are preferable, but must be cautiously used in children.

TONGUE (Excision of). *F. S. Eve, F.R.C.S.*

The operation of removal of the tongue with scissors continues to grow in favour, and that by the écraseur to recede to a corresponding extent.

In excision with scissors many operators control hæmorrhage by ligature of one or both lingual arteries as a preliminary step, a method introduced by Billroth. But this procedure has the disadvantage of rendering the operation much more tedious, and the hæmorrhage is not always checked by it, especially when only one half of the tongue requires removal, the artery on that side only being tied.

Mr. Whitehead[1] reviews the results of one hundred and four cases of total excision of the tongue by his method with a mortality of twenty, or a percentage of 19·21. In estimating the results it has been thought desirable to draw a clear distinction between cases in which the tongue alone was excised, those in which the tongue was removed together with the glands, and those in which division or removal of portions of the jaw was an additional part of the operation. Unquestionably the risks and dangers of these different operations are not the same, and it is misleading and unjust to classify them together. In excision of the tongue alone the death-rate is only 4·5 per cent., compared with 77 and 57 per cent. respectively when glands and jaw have been involved.

He briefly recapitulates the essential features of the operation: (1,) The patient should be completely under the influence of the anæsthetic during the first stage of the operation, but afterwards only partial insensibility should be maintained; (2,) The mouth should be securely gagged and kept fully open throughout the operation; (3,) The head should be supported in such a position that, whilst the best light is secured, the blood tends to gravitate out of the mouth rather than backwards into the pharynx; (4,) A firm ligature should be passed through the tip of the tongue for the purpose of traction; (5,) The first step in the operation consists in dividing the reflection of mucous membrane between the tongue and jaw and the anterior pillars of

the fauces : (6.) Rapid separation of the anterior portion of the tongue from the floor of the mouth ; (7,) Securing, if possible, the lingual arteries with Spencer Wells' forceps prior to division ; (8.) Passing a ligature through the glosso-epiglottidean fold, before finally separating the tongue ; (9,) The application of a mercurial solution to the floor o the mouth, followed by painting the surface with an iodoform styptic varnish.

For an anæsthetic Whitehead recommends the use of chloroform, although he knows of no objection to ether, which has an advantage in feeble subjects. The important point is to obtain deep anæsthesia before commencing the operation. The effectual gagging of the mouth is a point of great importance, for on the one hand it is necessary to keep the mouth wide open, whereas on the other we must avoid so pressing back the jaw as to embarrass the respiration. In fact, the aim in gagging the mouth should be to place the jaw, as it were, in the position it occupies in semi-luxation forwards.

Regarding position, in the first place, the patient's head must be neither too high nor too low ; the mouth ought to be, roughly speaking on a level with the surgeon's axilla. The head should be firmly held erect with a slight inclination forwards, in such a position that the light will fall well into the mouth. It is, of course, always desirable to take advantage of the best obtainable light.

Great inconvenience is generally caused by the persistent tendency of the patient to slip down on the operating table, and the best means to prevent this is for the patient to reclihe on an almost perpendicular back rest, with the thighs bent at a right angle over the elevated central portion of an ordinary operating table.

The treatment of the floor of the mouth after the tongue has been removed is a matter of considerable moment. It is first swabbed with a solution of biniodide of mercury (1 in 1000), and then painted with iodoform varnish. This is made by making a saturated solution of iodoform in ether, containing 1 in 10 of turpentine. The latter has a very marked influence in promptly checking the capillary oozing which occasionally prevents a dry surface being quickly secured.

The patient is fed with liquids, by the mouth, as freely and as early as possible, enemata being used only when it is necessary to supplement the amount of food the patient is otherwise able to take.

Instead of keeping the patients in bed and recumbent, they are made to sit up from the first, and in fine weather encouraged to walk out, if there be sunshine, the day after the operation.

Whitehead states his views regarding the écraseur as follows ; "It is only reasonable that I should state the grounds upon which I

prefer excision of the tongue with scissors to its removal by the galvanic or any other form of écraseur. In the first place I consider that it is more in conformity with the elementary principles of surgery to make use of a sharp-cutting instrument, it being desirable to leave a clean surface, a surface which, it must be acknowledged, is in the best condition for healing. To employ an instrument whose purpose is effected by bruising leaves a surface in the very condition we are most anxious to avoid in the ordinary practice of aseptic surgery. The wound, in fact, left after the use of the écraseur embodies every condition calculated to engender those putrefactive changes which it should be our primary aim to avoid. I fail to see any special danger in the operation of excising the tongue which can justify such a departure from surgical practice, and I cannot recognize any good reason why we should employ an instrument for excising the tongue which no surgeon would at the present day ever think of making use of in any other region of the body—an instrument which almost every surgeon of eminence in the past has made a point of condemning. With scissors absolute precision can be obtained, whereas the erratic course of the *écraseur* wire is absolutely beyond the control of the operator."

He proceeds: "When we come to consider what we can fairly and reasonably claim to be gained by excising the tongue, we have two questions to answer: Does excision prolong life, or, failing this, does it render the remainder of his life more endurable to the patient? From my own experience, I can bear the strongest and most emphatic testimony that, in the majority of cases, excision gives very great relief, and in support of this I could produce numerous letters I have received from patients, and preserved for the purpose of answering this question. Twenty-six patients out of the eighty-four successful cases were traced and found to have lived a year and upwards after excision, and I think that we are reasonably entitled to add to this number a certain percentage of the forty-one of whose fate nothing could be ascertained, and not to take it for granted that in every instance the patients had succumbed."

The statistics afford some interesting information on the probable predisposing and exciting causes of cancer in this situation. They show that out of one hundred and four cases a history of cancer in the family was only obtained in six cases. A definite history of syphilis was obtained in seven, and a doubtful account in seven other cases. In sixteen patients the origin of the cancer was attributed to an injury. Sixty-one out of the one hundred and four were ascertained to be smokers, and in the majority of these the cancer commenced on that

side of the tongue on which the pipe was usually smoked. In thirty-three cases the irritation of teeth is recorded as being the exciting cause of the disease. In marked contrast to these cases, one man had never smoked in his life, and had not possessed a tooth for twenty years.

The difficulties of ascertaining the duration of life after operation are very great. Positive evidence in sixty-one cases was obtained: fifteen patients survived the operation one year; four, two years; two three years; four, five years; and one, six years; and the patient whose case Whitehead published in 1880 lived fourteen years, notwithstanding the fact that she was sixty-two years of age at the time of operation.

Jacobson recommends a departure from Whitehead's procedure. He splits the tongue longitudinally along the raphe, and after freeing one half he cuts a deep groove through the tough mucous membrane of the side and dorsum, and then tears through the soft muscular tissues with a blunt director till the lingual nerve and artery are seen, when a long-bladed pair of torsion forceps are applied to the remaining structures, which are divided in front of the forceps.

REFERENCES.—"Brit. Med. Journ.," May 2, 1891.

TONGUE (Fissures of).

Synopsis.—(Vol. 1890, p. 482.) For *Fissure of Tongue*, Papayotin, 10 to 20% solution in glycerine and water; an intractable case was cured by Opium internally and a simple Carbolic mouth wash.

TONGUE (Glandular Hypertrophy at the Base of).

P. Watson Williams, M.D., Lond.

In our last edition (p. 453), Mr. Lennox Browne[1] dwelt on the importance of hypertrophy of the lingual tonsil as a cause of faucial tenesmus and its associated symptoms.

The methods commonly adopted for the removal of glandular hypertrophy at the base of the tongue are the galvanic cautery and the snare. But these methods are far inferior to removal by a cutting operation, similar to that which is employed in the removal of hypertrophied faucial tonsils. The faucial tonsil and this so-called "lingual" tonsil are composed of tissues of similar structure. Therefore the method which has already been found best suited for the removal of one may be regarded as best adapted to the removal of the other. It is only in cases where there are also enlarged vessels to be destroyed that the galvanic cautery is superior to any other method.

At the twelfth meeting of the American Laryngological Association, a "lingual" amygdalotome, or an instrument for removing glandular hypertrophy at the base of the tongue, was presented by Dr. John O. Roe.

The accompanying illustration (*Fig.* 35) represents the instrument. It is constructed on the principle of Physick's amygdalotome. The shank of the instrument, as shown in the cut, is curved so as to pass over the dorsum of the tongue, and the fenestra in the cutting portion of the instrument is made sufficiently wide to grasp the mass of tissue, which is usually more or less spread out across the base of the tongue, just above the epiglottis.

The handle is attached to the shaft of the instrument by a clamp, which permits it to be adjusted to any position by being moved forward or backward or turned to either side. The instrument is more conveniently used with the handle turned to one side, and it may be used with equal facility by either hand.

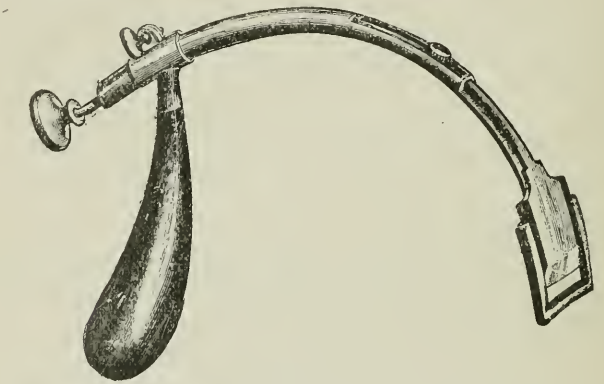


Fig. 35.

This instrument will be found superior to the snare, for the reason that the tissue can be much more readily engaged in the fenestra than in the loop of the snare ; and this is especially true if the instrument is pressed down firmly over the tissue, so as to make the glandular mass protrude through the opening as far as possible before the blade is forced down.

The instrument, which has been made for him by Tiemann & Co., of New York, is constructed so as to work as easily and freely as a faucial amygdalotome, and the blade is very readily taken out for cleaning and sharpening by simply removing the screw that fastens the blade to the stem.

In using this instrument, the tongue should be drawn forward and held by the patient (by the right hand if the operator uses the instrument with his right hand, and *vice versa*), and the laryngoscopic

mirror should be employed, for the reason that without due care the upper portion of the epiglottis might be engaged in the fenestra and removed instead of the hypertrophied tissue of the base of the tongue, and for this reason it is not a safe instrument to be used by an inexperienced operator.

REFERENCE.—[1] "New York Med. Jour.," Jan. 24, 1891.

TONSILS (Diseases of the). *P. Watson Williams, M.D., Lond.*

Tonsillotomy.—In cases where the tonsils have considerable volume, and cannot be destroyed by the galvano-cautery, Toison[1] removes them with an apparatus composed essentially of a cold snare. But the extremity of the wire loop, instead of being free, is fixed by three silk threads, easily broken, on to a soft ring at the free end of the conducting shank for the wire. In order to operate, it is necessary to engage the tonsil in the ring which carries the loop, and then to draw upon the opposite ends of the metallic thread, and at the moment when this traction is made the silk threads are broken, the wire disengaged, and it cuts little by little the tonsil previously fixed with a pair of Museux's forceps. He has removed many tonsils in this manner without hæmorrhage.

Tonsillitis.—Following up Leyden's recommendation of **Creolin** as a disinfectant for the throat, Dr. Itzig[2] has used it in follicular tonsillitis with marked success. Under its influence the purulent plugs in the lacunæ, as well as the swelling, tenderness, and fever, disappeared within twenty-four hours, and the patient rapidly recovered. It was prescribed as a 1 per cent. solution, diluted with equal parts or more of warm water; and was used in the form of a gargle several times daily. The disagreeable burning feeling in the throat which creolin causes, disappears rapidly on washing out the mouth with pure warm water.

Salol in Acute Tonsillitis and Pharyngitis.—Dr. Wright[3] acknowledges that he felt a good deal of scepticism on reading Gougenheim's enthusiastic description of the treatment of acute inflammation of the pharynx by internal administration of **Salol**, but decided to give it a trial. He tried it in fifty cases, giving from 60 to 90 grains daily. He found the most marked effect in lacunar tonsillitis, less in catarrhal pharyngitis, and least in well-developed quinsy. He presents his results in three tables, viz., those in whom treatment was begun on or before the second day; those in whom it was begun on the third day; and, lastly, those in whom it was begun on the fourth day or later. The number of hours after beginning treatment in which relief from pain was obtained is given in each case. The relief from pain coin-

cided in nearly all cases with the relief of the constitutional symptoms ; but, strange to say, and the same remark had been made by Gougenheim, the subsidence of the pain was often complete before the swelling or congestion had appreciably diminished. In lacunar tonsillitis, the disappearance of the little plugs from the lacunæ was usually synchronous with the abolition of pain. Dr. Wright concludes his article by quoting Gougenheim's summary, with which he fully agrees : (1,) Salol acts beneficially in acute anginas, of whatever cause ; (2,) It quiets the pain and dysphagia with the greatest rapidity ; (3,) In quieting the pain, it may shorten the duration of quinsy ; (4,) It lowers the temperature ; (5,) In nearly all cases it diminishes the duration of the angina ; (6,) In order to attain these results, the dose should not be less than 60 grains daily.

REFERENCES.—[1]"Jour. of Laryng.," June, 1891 ; [2]"Therap. Monat.," No. 9, 1891, "Pract.," Jan., 1891 ; [3]"Lond. Med. Rec.," Sept. 20, 1890 ; "Jour. of Laryng.," Dec., 1890 ; Ibid., July, 1891 ; "Gazette des Hôpiteaux," May 20, 1891.

TONSILS (Hypertrophy of).

Synopsis.—(Vol. 1890, p. 483.) Ignipuncture by thermo-cautery after applying Cocaine, repeating the operation twice a week for five weeks if necessary, and using astringents locally in the intervals.

TORTICOLLIS. (See also "Orthopædics.") *F. S. Eve, F.R.C.S.*

Mr. F. A. Southam[1] gives three cases illustrating the beneficial effect of excision of a portion of the spinal accessory nerve in obstinate cases of spasmodic torticollis. In each instance the spasm, which chiefly involved the sterno-mastoid, was of a severe nature, quite incapacitating the patients from following their occupation ; it had come on without any apparent cause, had been present for some months, and had resisted all the ordinary methods of treatment, for example, large doses of bromide of potassium, galvanism, massage, counter-irritation, etc.

The operation was carried out in the same manner in each case. An incision three inches long was made along the anterior margin of the upper end of the sterno-mastoid, and the nerve having been exposed by a careful dissection, about one-third of an inch of its trunk was excised just before it enters the under surface of the muscle. The immediate effect of the operation was to completely paralyze the sterno-mastoid ; the spasm ceased, and the position of the head at once became greatly improved. The head does not immediately become quite straight, for it appears as though the affected sterno-mastoid, as well as the muscles of the neck generally, become the seat of slight contracture or shortening, in consequence of the long-con-

tinued faulty position in which the neck has been held. This has to be afterwards overcome by manipulation—namely, by forcibly but gently straightening the head two or three times a day—assisted by an artificial muscle. The latter is provided by means of an elastic band fixed above to a poroplastic cap, and below to a belt or plaster-of-Paris bandage round the waist, and arranged in such a way that the extension acts in a line parallel with the unaffected sterno-mastoid. In some cases a second elastic band, attached behind in a vertical line from the occiput, will be found useful. The apparatus is worn for a few weeks, or for several months, until the head has regained its normal position and can be held straight without any effort on the part of the patient.

Southam has performed the operation upon seven patients, and the results have been sufficiently encouraging to make him recommend its adoption in similar cases when palliative treatment has been tried and found ineffectual.

The most suitable cases for operative interference are those in which the spasm is tonic in its nature and confined to the sterno-mastoid.

When other muscles are affected, the following operation devised by Keen[2] may be performed. It consists in division or resection of the nerves supplying the posterior rotator muscles of the head. After having made a number of dissections, the author formulated the steps of an operation which he has repeatedly done on the cadaver, and once on the living subject. The nerves to be resected in this operation are the posterior divisions of the first three cervical, by which the chief posterior rotators of the head, namely, the splenius capitis, the rectus capitis posticus major, and the obliquus inferior, are supplied. The external incision is a transverse one about 2½ or 3 inches long, made about half an inch below the level of the lobule of the ear, from the middle line of the neck posteriorly. The trapezius is divided transversely, and afterwards the complexus, care being taken to spare the great occipital nerve. The posterior division of the second cervical nerve is then divided or resected. The suboccipital nerve is next looked for in the suboccipital triangle, and traced down to the spine and divided. The external trunk of the posterior division of the third cervical nerve is then exposed below the great occipital, and divided close to the bifurcation of the nerve trunk. The only difficulty in Dr. Keen's case was the depth of the wound, which made it troublesome to get a good light, and rendered the mechanical steps of the operation rather difficult. The hæmorrhage, though free, could be easily controlled.

Noble Smith[3] has performed a similar operation successfully in a patient, in whom there was constant and very violent spasmodic action of the left sterno-mastoid and upper part of the left trapezius muscles, drawing the face towards the right shoulder. There was also spasmodic action of the splenius capitis and other muscles on the right side of the neck, these producing the same inclination of the head as the muscles already named of the opposite side. A portion of the left spinal accessory nerve was excised with benefit, and subsequently a similar operation to that of Keen was performed for the relief of the spasm on the right side of the neck. He adds: "A very important point in respect to these operations is one which I had all along been anxious about, and that was the loss of power from the muscular paralysis. This loss of power has proved to be very slight indeed, and the patient expresses herself as experiencing no discomfort or disability. She cannot lift the left hand quite as high above her head as she can the right, nor move it quite so far backwards, but she can use it as freely to any part of her head, or in any way that she usually requires it. The paralysis on the right side of the neck from the last operation appears to cause no loss of power whatever. Upon this point it may be stated that these operations may be freely undertaken without fear as to any weakness or loss of power that they may occasion."

REFERENCES.—[1] "Brit. Med. Journ.," Jan. 31, 1891 ; [2] "Brit. Med. Journ.;" March 21, 1891 ; [3] "Lancet," April 4, 1891.

TORTICOLLIS (Spasmodic).

Synopsis.—(Vol. 1891, p. 460.) Ligature of spinal accessory nerve succeeded in one case.

TUBERCULOSIS (Koch's Treatment of).

Synopsis.—(Vol. 1891, p. 467.) **Sulphate of Strychnine** hypodermically is suggested as remedy for depressant effects of the lymph on cardiac and respiratory centres.

TUMOURS.

Synopsis.—(Vol. 1891, p. 308.) **Hydrastis Canadensis**, Fl. Ext. gtt. 25 twice daily for uterine myomata (p. 32). **Mandragora** as external application for scirrhous, strumous and syphilitic tumours (p. 38). In cases of laryngeal tumours, laryngo-fissure is usually indicated.

TYPHOID FEVER. *Frank J. Wethered, M.D.*

TREATMENT.—The treatment of typhoid fever which has received most attention during the last twelve months is the **Cold Bath** treatment. Dr. Hare, of Brisbane, who has had considerable experience in this method, contributes an important paper on this subject to "The Practitioner" of March, 1891.

It would be impossible in the space which we have at our command

to give more than the briefest outline of Dr. Hare's paper, a perusal of which will well repay the reader.

The method of giving the bath is that introduced by Brand, and is, briefly, a cold bath of the temperature of 68° F., of about fifteen minutes' duration, every three hours, day and night, should the rectal temperature read 102·2° F.

The conclusions to which Dr. Hare arrives, and, we consider, quite justly so, are as follows :—

(1,) That, by means of the bath treatment, systematically employed, the hospital death-rate of typhoid may be greatly reduced.

(2,) That the reduction should amount to 50 per cent. on the previous death-rate ; and that the percentage mortality to admissions should not be over 8 per cent. (always supposing the term *typhoid* to be used in its second degree of extension).

(3,) That this result may be obtained in spite of the fact that many of the cases are unsuited to the treatment ; and that much more might be expected in appropriate cases only.

(4,) That the success is in proportion as the treatment is begun early in the disease.

(5,) That, as evidenced by the undiminished occurrence of perforation and hæmorrhage, and by the fact that early admission has failed to render them less frequent, the treatment has no influence on the depth of the ulceration.

(6,) That, since a constant percentage (about 4¼) of the cases admitted die from these accidents, no reduction in the general mortality much below 5 per cent. can be expected from the treatment, even were it possible to ensure every case being admitted under the most favourable circumstances.

(7,) That, as the result of the different liability of the sexes to these accidents, the prognosis under the bath-treatment is vastly more favourable in females than in males. For instance, in any two given cases, *cæteris paribus* and without reference to the date of fever on admission, the danger to life is but little more than half in the case of the former ; while if both are admitted during the first week of the fever, this is reduced to one-quarter.

(8,) That on the whole the lethal influence of the intestinal lesion is diminished ; that the treatment affects this (*a*,) directly, by moderating diarrhœa, and (*b*,) indirectly, by sustaining the powers of the patient, and thereby enabling him to recover from the effects of the hæmorrhage and other not necessarily fatal intestinal conditions.

(9,) That the vast bulk of the reduction in mortality is due to the prevention of those complications and modes of death which, being

more or less common to the febrile state, however induced, have been termed pyrexial. Thus (*a*,) fatal pneumonia has been less than one-fourth as frequent, this being chiefly due to the rarity of the bronchial form; (*b*,) brain complications have been less fatal, and brain symptoms (delirium, stupor, etc.), enormously reduced in frequency; while (*c*,) it is no exaggeration to say that simple cardiac failure would have been practically expunged from the list had all the cases admitted come under treatment during the first week of the disease.

Dr. Bouveret has also tried this treatment with considerable success. His cases amounted to a hundred in number, with a mortality of only 3 per cent., but the number of relapses were ten, and Dr. Bouveret acknowledges that he has himself noticed that relapses are more frequent in cases subjected to bathing than in cases treated by the expectant method, but that when such cases do occur only but few baths are required to again produce complete defervescence.

Dr. Burney Yeo strongly approves of the antiseptic treatment of typhoid fever, and for this purpose advises the use of **Chlorine Water,** made according to the following plan, the directions being given in his own words: "Into a twelve ounce bottle put 30 grains of powdered potassic chlorate, and pour on it 40 minims of strong hydrochloric acid. Chlorine gas is at once rapidly liberated. Fit a cork into the mouth of the bottle, and keep it closed until it has become filled with the greenish-yellow gas. Then pour water into the bottle, little by little, closing the bottle, and well shaking at each addition until the bottle is filled. You will then have a solution of free chlorine, together with some undecomposed chlorate of potash and hydrochloric acid, and probably one or two bye products. I greatly prefer this preparation of chlorine to the liquor chlori of the British Pharmacopœia; it is much pleasanter to take, and I have had much better results with it. To 12 ounces of this solution, for an adult I add 24 to 36 grains of quinine and 1 ounce of syrup of orange peel, and I give 1 ounce every two, three, or four hours, according to the severity of the case —that will be from 12 to 36 grains of quinine in the twenty-four hours, according to the case."

Dr. Yeo claims as the result of his treatment: (1,) A modification and sustained depression of the febrile temperature; (2,) An abbreviation of the average course of the fever; (3,) A remarkable maintenance of the physical strength and intellectual clearness of the patient, so that there has been far less need of stimulants; (4,) A greater power of assimilating food; (5,) A remarkable cleaning of the tongue, (6,) A deodorization of the evacuations; (7,) A more rapid and complete convalescence.

In a lecture on the new modes of treating typhoid fever, Professor Dujardin-Beaumetz remarks that there are three elements of success which ought always predominantly to enter into our therapeutics—the disinfection of the intestinal contents, the promotion of an abundant diuresis, and most scrupulous attention to the hygienic needs of the patient. **Salol** is in his judgment the medicament which best fulfils the first indication. This salicylate of phenol is not decomposed until it reaches the intestines, and is better tolerated than naphthol. It is the disinfectant *par excellence* of the intestines, and has been so far useful from this point of view, as in patients afflicted with artificial anus to do away with one of the most serious inconveniences attending that infirmity, by destroying the odour of the fæcal matters constantly flowing through the fistulous opening. We should therefore resort to salol, giving 30 to 60 grains in the twenty-four hours, combining it, if we wish, with salicylate of bismuth. As for the matter of diuresis, Dr. Dujardin-Beaumetz adopts the views of Albert Robin, and believes that it is useful to favour as much as possible the elimination of the products of organic disintegration. With this object in view it is necessary to give our patients abundant drinks to favour diuresis. Whereas certain authorities have used systematically cold baths, others antisepsis with tepid baths, others employ only the salicylate of bismuth, etc., Dr. Dujardin-Beaumetz is a thorough opponent of systematisation. For a disease like typhoid fever, which presents itself under the most varied forms, we cannot, he says, admit a therapeutic formula which applies indiscriminately to all cases, and our treatment should vary according to the patient whom we have before us. We may truly say that there is no treatment of typhoid fever, but only a treatment of typhoid patients.

Dr. W. C. Cahall having made trial of salol in every case of typhoid fever coming under his care during the past two years speaks very highly of its effects. The dose employed should be at least 3 grains, given every two hours, day and night, in the form of powder.

Dr. F. Schmidt has employed **Thallin** in twenty-two cases of typhoid fever, the remedy being given in doses varying from ¾ to 3 grains in a day.

The author maintains that the mortality, treated in this way, is less than that obtainable by any other mode of treatment, not excluding cold baths.

Dr. L. Wolff reports the results obtained by the use of **Naphthalin** in one hundred consecutive cases of typhoid fever.

The cases were all treated in the following way: On admission, calomel with soda was administered in grain doses every three hours

for six hours, or until its laxative effect forbade its further use. This was immediately followed by gelatin capsules containing 5 grains of purified and finely-powdered naphthalin every four hours, alternated with only a few drops of dilute hydrochloric acid. No other medication was permitted, excepting chemical antipyretics and cold sponging for hyperpyrexia. The diet consisted of milk, alternating with meat broths containing raw eggs; stimulants were administered as required.

The drug "controlled diarrhœa so completely that after its continued use laxatives were sometimes required." The total mortality was 10 per cent.

REFERENCES.—"Lancet," Oct. 11, 1890, and April 11, 1891; "Brit. Med. Journ.," Dec. 13, 1890, and June 13, 1891; "Pract.," Jan., March, and April, 1891; "Therap. Gaz.," Sept. 1890, and Jan., Feb., May, and June, 1891.

Synopsis.—(Vol. 1890, p. 490.) Clear intestines with **Calomel**, and then give **β-Naphthol**. ℞ Naphthol Beta grs. xl, Bismuth Salicylate grs. xl, M.; divide into ten powders and give one every hour in a wafer or mixed with a little milk or brandy; omit the **Bismuth** if diarrhœa is not marked. If constipation exist use the following, ℞ Naphthol Beta grs. xl, Magnesia Salicylates gr. xl to lxxx; to be divided and used as above. **Calomel** should be only used within the first five days; graduated **Cold Baths** to reduce fever; **Antipyrin**, 5 grammes divided into three doses, given hourly, beginning after 6 p.m.; **Thallin** and **Acetanilide** are also useful. If slight cerebral symptoms set in, an **Ice-bag** may be applied to head but not continuously, but in severe cases graduated **Baths** with cold affusions must be used; **Morphine** hypodermically for insomnia; **Camphor, Wine, Champagne**, and **Brandy** to combat cardiac weakness; **Starch** and **Opium** enemata for severe diarrhœa; **Ice-bags** to abdomen, and subsequently **Ice-water** enemata for intestinal hæmorrhage.

(Vol. 1891, p. 471.) Prolonged immersion in Water. Sponging. **Hydronaphthol**, gr. 2 to 3 in adult, gr. ½ in children under one year, gr. ½ to 1 for older children every two hours; when diarrhœa is present after the first three to six doses it may be given every three or four hours. **Chloralamide**, gr. 30 to 45 is a useful hypnotic in typhoid (p. 21). To disinfect motions, **Sulphuric** or **Hydrochloric Acids** diluted with double the quantity of **Water** should be mixed with equal parts of fæcal matter and allowed to stand two hours in the case of the former acid, and twelve hours in the latter. **Carbolic Acid**, 5% solution similarly mixed should stand for twenty-four hours. **Sublimate Solution**, 2 parts to 1000 with ½ part **Hydrochloric Acid** should stand at least half-an-hour, and preferably twenty-four. **Quicklime** added to the stools in 2½% proportion should stand twenty-four hours, and **Lime Water** should be similarly used and in the same proportion.

ULCER (Chronic Simple). *T. Colcott Fox, M.B.*

Mayland[1] points out that it is desirable to (1,) Relieve the engorged condition of the veins by removal of causes which bring it about; (2,) To get rid of the plugged condition of the lymph vessels; (3,) To re-

admit arterial blood more fully; (4,) To remove deleterious exciting influences from the surface of the ulcer. The first desideratum is aided by the recumbent position and bandaging; the second by massage of the limb and ulcer; the third by grafting or adjusting new skin over the healing ulcer; the fourth by bathing in bichloride of mercury lotion and by boric acid applications. Varicose veins should be excised.

Gunther[2] says the first indication is to sterilize the ulcer by some antiseptic solution, and then to powder the part with equal parts of salol and pure talc. Secondly, to improve the nutrition of the surrounding parts, so as to soften callous borders and promote lymph and blood circulation. This is accomplished by repeated massage and by tapping or light percussion with a light implement. Between the operations wet compresses should be applied, covered with rubber cloth. Thirdly, when there is a simple benign wound established, compression should be made by adhesive plasters.

Aristol is a powder held by some to be more healing than iodoform.

Elsner[3], stimulated by Unna's distinction between dermato-plastic and kerato-plastic remedies, finds the primary application of carbolic acid, corrosive sublimate, permanganate of potash, bromine, iodine, and other oxidating agents, followed by the use of zinc oxide, ichthyol, resorcin, sulphites, and other reducing agents, gives far better results than the usual happy-go-lucky empiricism.

An editorial gives the indications for treatment in chronic indolent ulcers as (1,) To subdue inflammation and stimulate the cells of the part to new activity; (2,) To restore the normal circulation; (3,) To soften any induration which opposes cicatrization; (4,) To combat and destroy micro-organisms, which keep up suppuration and necrosis; (5,) To remedy any existing dyscrasia and fortify the general health. Sometimes granulation is best promoted by stimulating astringent and antiseptic lotions, *e.g.*, **Red Wash** (sulphate of zinc., gr. ij, rose water, ℥j), 2 per cent. sol. of carbolic acid, **Lotio Nigra, Lot. Acidi Salicylici** (℥j to Hj), **Lotio Acidi Nitrici** (♏j to ℥j), **Lotio Tinct. Myrrhæ** (℥j to ℥iv), **Lotio Chloral Hydratis** (℥j to ℥iv), **Lot. Zinci. Chloridi. Poultices** (linseed) are useful where the ulcer is irritable and needs soothing, and where it is desirable to produce active determination of blood and increase formation of vessels, but the **Continuous Warm Bath** is better. Where there is no mechanical obstacle to healing the ulcer heals when the microbes are destroyed. Where mechanical obstruction exists, and dilated vessels and œdema are present, *pressure* is indispensable, carried out either by Baynton's system of strapping, which, however, pens up the discharge, or by Gordon Black's method

(emplast. saponis warmed by being passed through hot carbolic acid). In the latter case the ulcer should be cleansed, soaked with carbolic acid, and strapped. The straps should overlap four inches, be two inches broad, and reach three inches above and below the ulcer. It is not necessary to use compression or give pain. There is no accumulation of discharge even after a week. If compression by **Sheet Lead** moulded to the part (Atkinson) and unfolded night and morning is carried out, the ulcer must be disinfected with weak sublimate water. **Sheet Tin** has also been suggested. If **Martin's Rubber Bandage** is used it must be applied before the patient rises in the morning, and the ulcer dressed at night, whilst the bandage is washed and hung up to dry. *Skin grafting* is another useful auxiliary. **Multiple Incisions** are recommended by some in callous ulcers. The old method of excitation by blistering is falling into disuse.

REFERENCES.—[1]A. E. Mayland, "Glasgow Med. Journ.," July, 1891; [2]Gunther, "La Pratique Méd.," May 27, 1891; [3]Elsner, "Austral. Med. Gaz.," Feb., 1891; "Therap. Gaz.," April 15., 1891.

Synopsis.—(Vol. 1891, p. 11.) **Aristol**, 1 part to 10 of **Zinc Starch** as a dusting powder for simple or specific ulcers.

URACHUS (Cysts of). *A. W. Mayo Robson, F.R.C.S.*

In the treatment of cyst of the urachus, we owe practically the whole of our knowledge to Mr. Lawson Tait, who has operated on about eighteen cases. Mr. Tait divides these cysts into two groups: In one, the cyst wall is tough, does not dip into the pelvis, and can be separated from the other viscera; in the other, the cyst wall dips into the pelvis, the wall being brittle, friable, and gelatinous, and quite incapable of separation from the subjacent viscera, for which it forms a sort of peritoneal covering.

The former kind of cyst must be removed, the latter drained and washed out from time to time, circular drainage being employed if required.

An interesting and important paper on the subject has been written by Dr. F. B. Robinson, and published in the "Annals of Surgery" for November, 1891.

URINE (Analysis of the). *Robert Saundby, M.D., F.R.C.P.*

Permanganate of Potash as a Urinary Test.—Humphreys[1] has stated that normal urine contains a substance which instantaneously discolorises a solution of permanganate of potash. He attributes this to the presence of a phenol formed in the intestine by the decomposition of albumen. He considers that it is the retention of this substance which gives rise to uræmia. He found its amount dimin-

ished during a sick headache, but increased by fever. It was more abundant in the morning, after a meal, and in fine warm weather.

Glycosuria in Healthy Persons.—Moritz[2] has found that the urine of quite healthy persons may form a characteristic combination of grape-sugar with phenylhydrazin, the so-called phenylglycosazone. He therefore condemns for clinical purposes the use of this test, which has come a good deal into vogue on the Continent. The test is performed by boiling equal volumes of urine and phenylhydrazin solution, and after the mixture has become cold, shaking it with chloroform (Havelburg's modification). If sugar is present a layer of characteristic canary-yellow crystals forms upon the sinking chloroform, and can be proved by microscopic examination.

The action of Asparagus on the kidney was also the subject of an interesting correspondence in the "Lancet" (1891). The evidence went to show that when eaten in large quantities this vegetable produces a marked diuretic effect, though in small amounts no effect, or even a diminution of urine, may be observed.

Nencki[3] has found that the odoriferous body in the urine after eating asparagus is methyl-mercaptan, one of the products of the fermentation of albumen or gelatine, and a normal constituent of intestinal gas. (See also "Asparagus," Dict. of New Remedies, p. 21.)

Alkaptonuria.—Kraske and Baumann[4] have studied the case of a man, aged sixty-eight, with symptoms of cancer of the prostate, whose urine when freshly passed was straw or amber coloured, but after standing some hours turned olive-green and finally black. He stated that this had occurred since his earliest childhood. If the fresh urine was treated with an alkali (ammonia or soda) and shaken, it rapidly turned black. The urine reduced Fehling's solution, but gave a negative result with the bismuth test for sugar. The substance which Bœdeker called alkapton is really an acid. W. G. Smith believes it is pyrocateckuic acid; Kirk thinks it differs from that body and calls it urrhodinic acid: this is probably identical with Marshall's glycosuric acid. Huppert thinks it should be described as trioxyphenylpropionic acid (C_6H_2 (OH) 3 CH_2—CH_2 COOH). Nothing is known as to its cause. In this case the authors detected the presence of another body, which they call homogentisic acid, and made the unexpected discovery that it is formed from tyrosin. On certain days the patient was given varying amounts of pure tyrosin with his ordinary food, and the secretion of acid was thereby notably increased. It was also increased by meat diet.

The occurrence of *Hæmatoporphyrin* in the urine has recently been observed with a frequency which would be remarkable but for the

explanation that it is caused by a personal idiosyncracy to the use of **Sulphonal**, one of the new hypnotic drugs. The urine is dark red in colour, looking as if it contained blood, but does not react to the ordinary tests for that or for albumen. Such urine may remain for a very long time unchanged and quite clear (Salkowski[5]).

Grocco[6] has pointed out that icteric urine may give a flocculent precipitate, on boiling and adding acetic or nitric acid, which is not albumen, and which he believes to be caused by bile pigment, though an anonymous annotator in the "Brit. Med. Journ." (Aug. 22, 1891) attributes it to bile acids. He suggests that the urine should be first treated with $\frac{1}{50}$ to $\frac{1}{20}$ its volume, left to stand for some hours in a cold place, filtered, and the filtrate tested in the ordinary way.

The presence of hæmatoporphyrin in the urine may be recognized by its characteristic spectroscopic appearances of its alkaline aqueous solutions, viz., a faint band between C and D, and the faint band between D and E (nearer D), a dark band in the same interval near E, and a dark band between *b* and F (Mac Munn).

Sarcinæ.—Finlayson[7] has described two cases of sarcinæ persisting in the urine for a long time (in one case fifteen years) without giving rise to any accidents. There was a history of catheterism in both cases. The author remarks on the harmlessness of these organisms as bladder parasites.

REFERENCES.—[1]"Brit. Med. Journ.," vol. i., 1891, p. 584; [2]"Münch. med. Woch.," No. 1 and 2, 1891; [3]"Arch. f. exp. Path.," Bd. 28, Heft 3 and 4; [4]"Munch. med. Woch," No. 1, 1891; [5]"Centralbl. f. d. med. Wissensch," No. 8, 1891; "Brit. Med. Journ.," vol. i., 1891, p. 175; [6]"Riv. gen. ital. di. clin. med.," July 20, 1891; [7]"Brit. Med. Journ.," vol. i., 1891, p. 1371.

URINE (Incontinence of). *E. Hurry Fenwick, F.R.C.S.*

Dr. Kupke,[1] of Posen, considers the cause of incontinence of urine either to be diminished activity of the vesico-spinal centre in the lumbar part of the cord, or partial anæsthesia of the sensory nerves of the bladder, both of these conditions preventing prompt information being conveyed to the cortex of the cerebrum when the bladder is becoming full. In cases where deep sleep occasions the brain to lose control over the bladder, it is well to keep a light burning in the room so as to lessen the depth of the sleep. After calling attention to a number of well-recognized causes of enuresis, such as phimosis, intestinal worms, etc., Dr. Kupke mentions Guyon's and Unverricht's methods of galvanizing the parts, the former by means of a urethral electrode, the latter by means of a large stationary positive electrode applied to the lumbar region and a small negative electrode moved

from place to place over the pubes. He himself, however, prefers faradisation, combined with medicinal treatment. The former is applied by means of a large, flat, stationary, positive electrode over the last dorsal and first lumbar vertebræ, while a small negative electrode is applied with stroking movements over the region of the bladder. The most valuable drug is one which is but little known in this country—the **Sweet Sumach** (Rhus Aromatica). The preparation he employs is the extractum fluidum rhois aromaticæ, of which from 5 to 15 drops are given night and morning in a little milk according to the age of the child. Treatment must in many cases be persevered in for three or four months in order to obtain a lasting cure. The well-known regimen as to fluids at night, a hard mattress, baths, etc., must of course be attended to. Strychnine, which used to be given before **Rhus Aromatica** was adopted, is best administered hypodermically—1 milligramme of the nitrate daily. Tincture of nux vomica is unsuitable.

The late Dr. Steavenson[2] describes his method of treating incontinence. It is not exactly the same as that followed by Guyon and Unverricht. It was seldom that he had to pass an electrode into the urethra; and he thought that failure often ensued if the second electrode was "moved from place to place over the pubes." His reasons were that "the tendency of all electrical currents is to take the shortest route possible to complete the circuit, always of course choosing the road offering the least resistance. If one electrode is placed on the lower dorsal spine and the other above the pubes, the sphincter vesicæ is almost completely without the circuit, and then receives very little direct influence. In cases where there is weakness of the sphincter, unless an electrode is placed in the urethra itself, the most advantageous position for the second electrode is the perinæum." He seldom used the interrupted current, although it is strongly recommended by Erb. His usual plan was to place a pad connected with the negative pole of a continuous current battery over the lower dorsal region of the spinal column, and a small button electrode on the perinæum. He advised that the electrode connected with the negative pole should be the fixed one, because of the sensitiveness of the parts to which the second electrode has to be applied, and the small space, and therefore the difficulty experienced in moving the electrode about. "In all cases a very weak current is used, and therefore the fixed negative electrode, being of wide surface, does not painfully affect the back; whereas, if the current were reversed and the button electrode in the perinæum made negative, a weaker current still would have to be used to enable the patient to bear it." In the treatment of atony

of the bladder, incontinence of urine, or undue frequency of micturition he usually employed the current for eight or ten minutes every day or every other day; the great majority of cases only requiring about eight or ten applications.

[The reporter can endorse Dr. Steavenson's statements.]

REFERENCES.—[1] "Lancet," p. 1111, Nov. 22, 1890. [2] "Lancet," Jan. 10, 1891.

Synopsis.—(Vol. 1891, p. 280.) Systematic use of **Warm Water** injections. (Vol. 1891, p. 478.) Purdy's **Sugar Test** (more stable than Fehling's solution) ℞ Cup. Sulph. Pure 4·15 grammes; Caustic Potash Pure 20·4 grammes; Strong Ammonia (sp. gr. 0·90) 350 centigrammes; Pure Glycerin 50 centigrammes: Distilled Water to 1 litre. Dissolve **Cupric Sulphate** in a portion of **Water** and add the **Glycerin.** Dissolve the **Caustic Potash** in another portion of **Water.** Mix the solutions and add the **Ammonia.** With **Distilled Water** bring the volume to 1 litre and filter. Thirty centigrammes of the solution is reduced by ¼ grain of grape sugar on boiling. **Safranin Solution,** 1 to 1000 is a useful sugar test; 16 drops of urine are diluted with 5 times the volume of safranin solution and boiled with 30 drops of **Caustic Potash** solution, and if sugar be present the solution is decolorised. The **Diazo-Reaction,** useful for diagnosis and prognosis, specially in phthisis and typhoid fever. **Rosenbach Reaction** also useful in prognosis.

URINE (Non-retention of in Women).

Synopsis.—(Vol. 1890, p. 503.) If caused by contracted bladder, gradual dilatation by means of **Warm Water** is useful, gradually increasing the quantity at each sitting until 15 to 20 ounces can be held; twisting the urethra; **Belladonna** internally; **Rhus Aromat.** (5% tincture from the bark) in doses of ♏v to xx is recommended.

URTICARIA. *T. Colcott Fox, M.B.*

To treat this troublesome malady rationally it is in the first place absolutely necessary to make certain whether we have to deal with a primary urticaria or one secondary to and complicating some other affection, as phthiriasis or scabies; and in the second place to have a clear idea of the many direct and reflex methods by which angio-neurosis can be excited. Too often the treatment is quite empirical.

Quinquand[1] gives **Quinia** (5 to 10 grain doses) in intermittent urticaria, but **Liquor Arsenicalis** may be added with advantage.

In chronic urticaria baths and hydropathy in all forms are forbidden. Wrapping the patient in cotton batting often does good, whilst internally, alkalies, arseniate of soda, naphthol are indicated. Locally bathe the patient in :—

℞	Aq. Lauro-Cerasi	50	Aqua	200
	Chloral Hydrate	5	M.	

or ether, ℥j; tepid water, ℥ij; or spirit of camph., ℥j; chloroform water, ℥ix; or powder the skin with :—

℞	Amyli	50	Acidi Salicylici	5
	Zinc Oxidi	10	M.	

Classic remedies, such as salicylate of sodium, atropine, quinine, and strophanthus, failing, Stern[2] says we have in **Iodide of Potassium** a valuable remedy. Locally 1 part of water and 2 parts of vinegar are recommended.

REFERENCES.—[1]Quinquand, "La Tribune Méd.," Jan. 1, 1891; [2]Stern, quoted in "Brit. Journ. of Derm.," March, 1891.

Synopsis.—(Vol. 1891, p. 481.) **Carbolic Acid**, 2% solution allowed to remain on some time. **Aqua Laurocerasi** in Almond Emulsion. Lime Juice or slices of Lime or Lemon is a popular remedy. Warm baths should not be used. As a hypnotic Sulphonal is best. Tincture of Strophanthus, gtt. 15 to 20, during twenty-four hours has proved valuable in stubborn cases.

UTERINE APPENDAGES. *R. Milne Murray, M.A., M.B.*

Remote Effects of Removal.—Lawson Tait, in an address to the Surgical Congress of France, discusses this matter. He divides his cases into three groups: (1,) Cases in which the disease or symptoms are uterine, such as myoma, otherwise incurable metrostaxis, and dysmenorrhœa; (2,) For changes in the uterine appendages themselves, due to inflammatory disease; (3,) For conditions and symptoms of a nervous kind, mainly in connection with the menstrual periodicity, and which it is hoped to remove or cure by the arrest of menstruation.

Under the first group he discusses the results obtained in two hundred and seventy-one operations in which the appendages were removed for uterine myoma. Of these, two hundred and sixty-five recovered, giving a mortality of 2·2 per cent. Of the two hundred and sixty-five cases the results in eight were unsatisfactory, that is to say, "the tumour grew and had to be removed by hysterectomy or the patient died from conditions which were suspected to be more or less connected with the continuance of the disease. This leaves two hundred and fifty-seven out of a total of two hundred and sixty-five cases, in which complete cures have been effected—that is to say, in which the symptoms have been satisfactorily relieved—when the tumour has either entirely disappeared, or has so diminished, or has been so satisfactorily arrested as to be no longer a source of trouble, and where the main feature of the disease, exaggerated menstruation, has been completely and permanently cured." As regards disappearance of the tumours after removal of the appendages, Tait thinks that under forty years of age about 70 per cent. of the tumours entirely disappear. Between forty and fifty they do not, as a rule, disappear entirely, but become remarkably diminished, and after forty-five the diminution is only a shrinking, running between ⅓ and ⅙.

With reference to the second class of cases, he draws attention to the extreme difficulty of the operations, but holds that no operation once begun should be uncompleted, though in some of these their completion involves the major operation of hysterectomy. "I never hesitate to overcome the most intimate adhesion of an old suppurating tube or ovary to bladder or intestine merely for the fear of a rent of these viscera. In many cases I have had urinary and fæcal fistulæ remain for months after an operation, but I have always succeeded in ultimately closing them." Regarding the results of these operations he admits that it is much more difficult to draw conclusions. He points out that the case is not necessarily cured simply because menstruation is arrested, for the mere arrest of menstruation is not all that is required in cases of old pelvic suppuration, and even less severe cases of chronic inflammation of the pelvis; in fact arrest of menstruation may not be necessary for a cure. Thus while the operation in the majority of cases does at once arrest menstruation it frequently fails at first to relieve the pain. The pain seldom lasts more than twelve months, but during that time it is sometimes the cause of great disappointment to the patient and worry to the surgeon. In four cases where the pain persisted Tait reopened the abdomen and in all the cases found that the stump of the Fallopian tube had formed a fresh cyst. Removal of these cured three but the fourth succumbed. From these cases he urges the importance of complete removal of the tube.

As to the third group, Tait says he has avoided the extension of his practice in this direction with a caution which he thinks has been excessive to the point of mistake, but he thinks that in the group of neurotic ailments the operation has a great future before it—after the present warfare has ended and when its proper application can be studied in peace and without prejudices. He relates two cases, one of which was a girl the subject of uncontrollable epilepsy. After the appendages were removed a few attacks of *petit mal* only occurred. The other case was that of a lady, twenty-five, who was seized with homicidal mania, especially appearing at menstrual periods. After removal of the appendages the patient entirely recovered in a very few months, and now for more than six years has been quite well.

At the Obstetrical Society of London, Dr. Playfair read a paper on "Removal of the Uterine Appendages in Cases of Functional Neuroses," in which he detailed several cases which came under his observation by which the value of the operation in such cases was rendered very dubious. The general conclusions arrived at were: (1,) That the removal of the appendages was not a legitimate procedure in cases of purely functional neurosis; (2,) That when marked structural disease

of the appendages co-existed with severe neurotic conditions, the latter should be treated in the first instance, in the hope that operation might be avoided; (3,) That in hystero-epilepsy and hystero-mania the results of operation had been so unsatisfactory that it was a procedure of very doubtful expediency, and not to be recommended.

In a paper "On the Treatment of Chronic Disease of the Uterine Appendages," read at a meeting of the Medical Society of London, Alban Doran reviews the methods in vogue for dealing with these conditions. These are: (1,) Rest; (2,) Electricity; (3,) Massage; (4,) Curetting of the uterus and Emmet's operation; (5,) Catheterism of the tubes; (6.) Vaginal puncture of cystic tubes; (7,) Abdominal section, which includes the following sub-divisions: (*a*,) The complete operation, removal of the tube and ovary, or oöphorectomy; (*b*,) drainage of a hydrosalpinx; (*c*,) breaking down of adhesions and drainage; (*d*,) essentially "incomplete operations," or simple opening of the peritonæum; (*e*,) plastic operations on the tube, or salpingostomy.

With reference to oöphorectomy he says: "Oöphorectomy is the best operation in a large class of chronic cases where subacute seizures occur frequently and at gradually shortening intervals, and where careful bimanual palpation proves the existence of a mass on one or both sides of the uterus. The tube and ovary are then degenerate and useless. The more cystic they become the more discomfort they cause, and the more probably will they form adhesions to intestine and omentum. The health suffers, the patient is crippled, and, if poor, incapacitated from earning her bread. Pyosalpinx, a not infrequent complication, is in itself a source of danger to the patient. Granting that rest is insufficient to relieve the patient, abdominal section is more satisfactory, and even safer, than the palliative measures above noted."

"Another operation less radical than oöphorectomy and yet often effectual, is the simple breaking down of adhesions and subsequent drainage, the appendages comparatively healthy being left behind. The operation is not always easy, and we have not the advantage of reliable statistical records." The author concludes with the following remarks: "Removal of diseased appendages should be avoided whenever possible. In long-standing neglected cases it is hardly avoidable, yet even then a less severe operative measure, already indicated, may suffice. Practitioners and nurses are growing more and more skilled. Hence neglected cases are becoming rare; unfortunately certain circumstances preclude the chance of their total extinction. I hope, on a future occasion, to be able to analyze a series of cases within my own

practice, especially in respect to the relative results of complete and incomplete operations."

In a paper read before the same Society, giving the results of thirty cases of chronic disease of the uterine appendages, William Duncan explains his views of the treatment of such cases. He recommends removal of the appendages : (*a*,) When a definite tumour of the appendages is found in the pelvis, accompanied by pain and hæmorrhage. This applies to hydrosalpinx as well as to other forms ; (*b*,) In cases of matted ovaries and immobile uterus with dysmenorrhœa, dyspareunia and perhaps menorrhagia, without necessarily any definite tumour. Where the tubes are thickened, the ovaries enlarged and tender, tonics, aperients, repeated blisterings, hot douches and glycerine tampons should be tried for two months, and if these fail to relieve, then removal should be adopted.

In cases of congenitally ill-developed ovaries, with an acutely anti-flexed uterus, associated with acute dysmenorrhœa and sterility, he would first dilate the cervical canal by means of Hegar's dilators ; this failing, electricity might be tried, and, as a last resource, the ovaries should be removed. If, on opening the abdomen, the ovaries and tubes are found fixed by adhesions but are otherwise normal, the adhesions should be broken down but the appendages must not be removed.

In neuroses where the appendages are not diseased their removal is entirely unjustifiable.

REFERENCE.—"Med. Press," 1891.

UTERUS (Diseases of).

Synopsis.—(Vol. 1890, p. 511.) Ergot, Hydrastis, and the Bromides to restrain hæmorrhage due to myoma, also the use of the curette, which has been followed in some cases by intra-uterine injection of Iodine with Braune's syringe ; for the pain of myoma, infusion of Cotton-root Bark, 3 teaspoonfuls of the powder to a pint of water, this being divided into three doses for one day. Apostoli's Electrical Treatment and Removal of Appendages for myoma, the latter being the more satisfactory ; for chronic endometritis, packing the uterine cavity with Iodoform Gauze after dilatation ; use of the curette ; where sterility is due to chronic cervical endometritis, painting the cervical canal with Perchloride of Iron, one part to three of Glycerin.

(Vol. 1891, p. 482.) In chronic muco-purulent and hæmorrhagic endometritis, pencils of Chloride of Zinc introduced into the cavity are very useful. If much pain follows, an injection of Morphine should be given. Chloride of Zinc solution, 10% to 50%, is a useful application for mild cases of cervical catarrh. Drainage of Uterus in acute and chronic endometritis is advised. A strip of Iodoform Gauze is introduced right up to the fundus after dilatation, the gauze being changed daily. Others recommend dilatation only, or accompanied by curetting.

For backward displacement of the uterus Frommel's operation of shortening the utero-sacral ligaments and Boldt's ventro-fixation method are recom-

mended instead of Alexander's; Dudley shortens the round ligaments at the uterine instead of the inguinal end; Schucking produces an artificial anteflexion, and his operation has been modified by Zweifel. Fl. Ext. **Hydrastis Canadensis**, gtt. 5 to 10, in uterine myomata and uterine hæmorrhage; also **Hydrastinine Hydrochloride**, 5 to 10% solution, as injection instead of ergotine for uterine hæmorrhages (p. 32).

Aristol, 1 part to 10 of **Zinc Starch**, has proved useful as dusting powder in endometritis, hyperplasia of cervix, parametritis, eczema vulvæ, etc. (p. 11).

UTERUS (Displacement of). *R. Milne Murray, M.A., M.B.*

Relation of Alexander's Operation to Pregnancy.—Dr. William Alexander[1] discusses the reciprocal effects of pregnancy and parturition on the operation of shortening the round ligaments of the uterus. He says that most men seem to come to the conclusions: (1,) That shortening the round ligaments will prevent the usual course of pregnancy, causing it to terminate in abortion; and (2,) That, should pregnancy by any means chance to go to term, and parturition take place, the round ligaments will be so stretched that the old displacement will recur.

The author makes the following propositions: (1,) That the occurrence of pregnancy is favoured in cases of retroflexion and retroversion by the operation of shortening the round ligaments, and that when pregnancy occurs it proceeds and terminates naturally; (2,) That in backward displacements the displacement does not tend to recur after parturition, whilst in cases where the round ligaments have been shortened for procidentia or prolapse, the return of this displacement will largely depend on the amount of destruction of the perineum by the passage of the child.

He supports these propositions by two sets of considerations, the first theoretical, the second derived from the results of operation. As regards the first, he combats the ordinarily accepted view that the round ligaments undergo great development and stretching during pregnancy, and holds, on the contrary, that the broad ligaments, round ligaments, adhesions, etc., are always partially left behind by the expanding uterus. Further, *post partum* involution of the uterus tends to restore the position of parts to that which existed before pregnancy. From this it would appear that the effects of the operative shortening of the round ligaments are not likely to be undone by the changes co-incident with pregnancy. As regards the practical results of the operation, the author records seven cases in which the operation was performed, and in which pregnancy occurred and passed through a perfectly normal process. The ages of the subjects varied between twenty-four and thirty-eight. Six of the cases

suffered from backward displacement, one from prolapse, and in no case were the good effects of the operation in any way interfered with or diminished after recovery from labour.

Alexander-Adams' Operation (Modified Method).—Dr. George M. Edebohls[2] describes a modified form of Alexander-Adams' operation. After making an incision for two and a half inches from above the spine of the pubis, over the site of the external abdominal ring, parallel to Poupart's ligament, he inserts a grooved director into the external ring just beneath the outer and upper margin. "It is advanced along the inguinal canal, hugging closely its anterior wall, to a point opposite the internal ring. The anterior wall of the canal, along its whole length, is now divided on the director, observing care to cut as nearly as possible in the exact direction of the course of the aponeurotic fibres. The internal ring is gently felt for, but not dilated, and sometimes the ligament can be distinctly felt emerging therefrom. Generally, however, it is not easy to be sure of feeling the ligament. A blunt hook is next passed down to the ring, and its point made to sweep across the bottom of the wound from above and within, along the posterior and inferior walls of the canal. The ligament is found in the inferior and outer part of the canal, nestling close behind Poupart's ligament. It is brought out by the hook, and liberated from its cellular attachments. The fibres of insertion into the canal are likewise separated from the walls of the latter. It will be found that the ligament, at its emergence from the internal ring, constitutes a well-marked, oval, strong band of fibres; that it immediately begins to spread out, and attenuates rapidly as it proceeds inward and downward in the direction of the external ring.

"The only difficulty in performing the operation is likely to be encountered here. If the ligament is picked up in the canal at a distance from the internal ring it fails to present its peculiar ligamentous sheen, owing to its separation into fibres for insertion into the walls of the canal. The operator has the ligament upon his hook, but fails to recognize it. From its resemblance to muscular fibres he is liable to mistake it for the latter. If the seized bundle, however, is made tense by traction, it can be traced by the finger directly to the internal ring. Recollecting that the canal contains nothing but the ligament and the accompanying small ilio-inguinal nerve, the operator draws confidently upon the seized tissues, and finds the round ligament, *in propria forma*, emerging with its peritoneal investment.

"The broad ligament covering the round ligament is drawn out in the form of an inverted funnel. With one hand pulling on the round ligament in a direction at right angles to the plane of the aperture of

the ring, two fingers of the upper hand strip or peel back the peritonæum of the broad ligament from the round ligament, until three to four inches of the latter have been pulled out and bared. In doing this the reflection of the peritonæum should be distinctly kept in view. It is easily recognized as a white line running transversely across the round ligament, anteriorly and posteriorly, and all but meeting at the sides.

"In three of the twenty-six ligaments thus treated I have torn and opened the peritonæum in stripping it back. The resultant little holes gave no trouble. By spending a little time over the work, and stripping the peritonæum back gently and slowly, this accident can be avoided.

"The wound is now protected with bichloride gauze and the operation performed in the same manner on the opposite side. The next step in the operation consists in stitching the drawn-out parts of the shortened round ligaments securely in the inguinal canal. The ligament is pulled out as far as it will go. I have never failed to draw it out three inches, nor ever secured a shortening of more than four inches.

"The drawn-out ligament, still attached at the pubes, is now handed to the assistant, who by means of the blunt hook exerts sufficient traction to hold it taut.

"This traction is made in the direction of the opened canal, so that a portion of the ligament which previous to operation was situated within the abdominal cavity now occupies the space along the course of the canal formerly filled by the extra-abdominal portion of the ligament. In this situation it is secured by sutures of silk-worm gut passed in the following manner : The first suture traverses the wound at the level of the internal ring. It is introduced through one lip of the wound, embracing skin, superficial fascia, and the aponeurosis of the external oblique, into the inguinal canal. Here the taut ligament, as it emerges at the internal ring, is pierced transversely by the needle, which then traverses the other lip of the wound, penetrating in succession the cut fascia of the external oblique, the subcutaneous fat, and the skin.

"Three to five sutures are passed in a similar manner through all the tissues on either side of the wound, into and across the canal, in their course through the latter piercing the ligament. These sutures, when tied upon the skin, close the opening in the anterior wall of the canal by bringing into juxtaposition the divided edges of the fibrous aponeurosis of the external oblique, as well as of the more superficial structures, while at the same time they moor the shortened ligaments safely inside of the canal, where they properly belong.

"The operation is completed by cutting away the excess of ligament projecting beyond the lower angle of the wound. Drainage is effected by three or four strands of silk-worm gut running along the bottom of the wound along its entire course and emerging at either end. I take care that these silk-worm gut drains reach into the inguinal canal at one point by passing them beneath the deepest portion of one of the wound sutures."

REFERENCES.—[1] "Brit. Med. Jour.," Feb. 14, 1891; [2] "New York Med. Jour.," Oct. 11, 1890.

VARICOCELE. *F. S. Eve, F.R.C.S.*

Mr. William H. Bennett[1] describes an operation for the radical cure of varicocele. An essential detail in the operation, after the vas deferens has been isolated in the customary way, is an application through an incision in the scrotal tissues of two ligatures placed at a distance from each other round the sheath of fascia which encloses the spermatic plexus of veins. The portion of the cord lying between these ligatures is then excised. The whole of the plexus of veins, with the exception occasionally of a small vessel lying remotely at the back, is contained within the sheath formed by this fascia, and one object of including it in the ligature is to ensure the obliteration of the whole of the veins; for it is clear that if the ligatures are passed round the connective tissue sheath before the vessels are exposed none of these can escape. Further, if the ligatures are passed in the manner described, not only are the veins with certainty included, but also the main trunk of the spermatic artery. It is almost impossible to include the whole of the latter vessels in a ligature in a case of varicocele without also including the artery, unless an elaborate and tedious dissection be undertaken for the purpose. It therefore would seem probable that in the vast majority of operations for varicocele, in which the spermatic plexus of veins is divided, that the main trunk of the artery is also involved in the section. A point of interest is the effect of this division of the spermatic artery, together with the veins, upon the nutrition of the testicle. The isolated position of this organ, coupled with the accepted view that its blood-supply depends almost entirely upon the long and slender spermatic artery, has given rise to the impression that its vitality is endangered by the division of this vessel, together with the spermatic plexus of veins, and that section of the spermatic artery, veins, and vas deferens—virtually the entire cord—is also followed by sloughing of the testis.

Mr. Bennett, however, maintains that, in regard to division of the spermatic artery with the veins no harm whatever need result, for the artery of the vas deferens, which is certain to have escaped injury, is

by no means always an insignificant vessel, and generally sufficient, by its anastomoses with the spermatic, to prevent not only immediate necrosis of the testicle, but also immediate wasting, as it often receives assistance from other vessels. In support of this statement, he claims that in numerous cases in which he has operated a portion of the spermatic artery could be demonstrated in the excised part of the cord, and that in none of these instances has there been the least suspicion of wasting.

Finally, the points to which the author especially calls attention may be summed up in the following sentences ; (1,) That the vas deferens having been displaced in the manner usually adopted in operations for varicocele, the spermatic artery does not accompany it, but remains with the spermatic veins ; (2,) That in cases of varicocele the division of the main trunk of the spermatic artery, together with the veins, if the ordinary principles of surgical cleanliness be observed, is not only harmless to the testicle, but probably aids in the ultimate relief of the affection by diminishing the pressure of blood going to the testis at the time when almost all the returning veins are suddenly obliterated ; (3,) That the division of the vas deferens, spermatic artery, and spermatic veins, which entails a section of apparently the whole cord, is not necessarily followed by sloughing, or even subsequent wasting of the testicle, provided that a perfectly aseptic condition of the wound is maintained.

REFERENCE.—[1] "Lancet," March 7, 1891.

VENESECTION. *Frank J. Wethered, M.D.*

Dr. Pye-Smith[1] communicated a paper to the Royal Medical and Chirurgical Society on the therapeutical value of venesection, its indications, and its limits. Venesection is useful in cyanosis with distension of the right side of the heart, whether from pulmonary or from some other obstruction to the circulation ; in the intense pain of aortic aneurysm ; and in uræmic and prolonged epileptic convulsions. Dr. Stephen Mackenzie remarked that the time was ripe for the reconsideration of the question of venesection. He had found it of great practical benefit in many cases, but its main use is in cases of over-distension of the right ventricle. In capillary bronchitis it gives great relief, and is sometimes curative ; and in pneumonia it often gives the best results. He quoted the case of a lady who was suffering from a very severe attack of pneumonia, with high temperature, rapid pulse, and cyanosis. Bleeding to 26 ounces proved of marked benefit. A second relapse was treated by leeching, which caused 5 ounces of blood to flow, and this did good ; but, when bad symptoms returned for a third time, on the removal of 12 ounces of

blood she rallied and recovered. He had bled many patients for uræmia, but the results were not encouraging. Dr. Broadbent said that his experience of venesection in cases of uræmia has been almost uniformly favourable. He does not attribute that affection to the direct effects of a toxic agent upon the circulation, but to its producing high tension, and hence it is that venesection relieves it. In bronchitis, when cyanosis is present, he has not formed a favourable opinion of it, preferring an emetic in such cases. Mr. Hutchinson stated that latterly he has found that a very simple measure gives all the advantages of venesection, and that is, placing the patient's feet up to the knees in a bath of very hot water for a considerable period. This local determination of blood appears to him to act just as efficiently as venesection in cases of head and chest injury. Dr. Angel Money considered it inadvisable to bleed in cases of bronchitis with cyanosis in the very old and very young. He recommends a plan of Dr. Barlow's, of rapidly applying an Esmarch's bandage to the lower extremities; and then, on removing it, a considerable congestion of the limbs results, with relief to the patient.

Some time ago Dr. Christian Simpson recommended a method of bleeding in some forms of pulmonary congestion. Dr. Harley[2] proposes a simple modification of this procedure, which is equally applicable to cases of pulmonary and hepatic phlebotomy.

Dr. Harley's proposal is this: As the trocar has always to be thrust some distance into the tissues of the organ from which it is desired to extract blood, he thinks before placing the point of the finger on the mouth of the cannula, with the view of arresting the blood-flow, it should be slightly withdrawn—say about half-an-inch or more—in order to leave an empty passage wherein a sufficiently large blood-clot may form and fill the channel. In which case the surrounding tissues of the organ will, in contracting upon the clot, hold it so firmly by their own resilience that, on the withdrawal of the cannula, it will break off from the end of the much larger mass within it, and remain as an effective plug in the wound. This is a point of greater importance in cases of pulmonary than of hepatic phlebotomy. For while the rigidity of the ribs makes it impossible for one to compress by means of a pad and binder the thoracic walls against the wound-orifice in the lung sufficiently firmly to preclude the escape of blood from it, in the case of the liver, on account of the wound being made in the outer surface and the abdominal parietes immediately over it being freely mobile, no difficulty whatever is experienced in bringing the abdominal walls into firm contact with the orifice of the wound in the liver by the application of a bandage and compress, and thus

effectually preventing after-hæmorrhage. However, even in the case of hepatic phlebotomy, it is just as well to recommend taking the additional precaution of preventing, by the induction of the formation of an intrahepatic blood-clot, any possibility of internal bleeding occurring.

REFERENCES.—[1]"Pract.," May, 1891 ; [2]"Therap. Gaz.," Feb., 1891.

VERRUCA. *T. Colcott Fox, M.B.*

Payne[1] says **Collodion of Salicylic Acid** seems generally the best application, but does not always succeed. The commonest mistake is to attempt to destroy the wart once for all by some powerful caustic, for the process is painful and apt to leave a scar. A better method is to apply some light caustic, such as acetic acid, either concentrated or diluted to half strength, several times daily.

Kaposi applies once daily round the wart and its base 1 part of perchloride of mercury in 30 of flexile collodion.

Paul Müller[2], of Hamburg, and Pullin found warts disappear under the influence of arsenic administered internally in a few weeks.

Rœmer[3] says the flowers of verbascum phlomoides and V. thapsus (Mullein), freshly torn from the calyx and pressed on the wart and firmly rubbed in, effect a rapid cure.

REFERENCES.—[1]Payne, "Brit. Journ. of Derm.," June, 1891 ; [2]Müller, "Allg. med. Central-Zeitung" ; [3]Rœmer, "Nat. Druggist."

VERTIGO. *Græme M. Hammond, M.D., New York.*

Vertigo of organic origin, says Dr. L. C. Gray[1], is accompanied by less irritability and apprehension on the part of the patient than when the vertigo is functional. Organic vertigo proceeds from disease of some one or more of the abdominal or thoracic viscera, the spinal cord, the intra-cranial organs, or the ear. Kidney, heart, and organic liver diseases cause only slight vertigo, which lasts but a short time. Renal vertigo is usually accompanied by headache, and there are at times hebitude and coma. Hepatic vertigo is associated with hebitude, jaundice, or dropsy. Almost all intra-cranial lesions give rise to vertigo. Cerebellar lesions and lesions of the temporal lobes cause swaying, staggering, or rotation. The form of vertigo which causes most distress is chronic ; coming on suddenly in paroxysms, varying from a sudden uneasy sensation of loss of equilibrium to a great uncertainty of gait, and is frequently accompanied by nervous symptoms, such as tingling of the extremities, a feeling of distension or fulness about the head, usually at the vertex, ringing in the ears, irritability, nervousness, and insomnia. This form of vertigo often lasts for years, even after the attending nervous symptoms have dis-

appeared. It is made worse by heat and by temperature alternations. Dr. Gray does not consider these symptoms due to lithæmia. He adopts the old theory that this form of vertigo is of gastric origin, including the entire digestive tract, and is due in most instances to persistent error of digestion of the nitrogenized or starchy elements of food, or of both. For therapeutic purposes he groups his cases into : (1,) Those in whom the general neurasthenia was slight ; and (2,) Those in whom it was severe. In the non-neurasthenic cases he begins with 20 drops of dilute **Nitro-muriatic Acid** before meals in a wine-glass of water, and 1 drachm of fluid extract or 2 grains of solid extract of **Cascara Sagrada** three times daily. The cascara should be taken continuously, reducing it, however, if it produces more than two feculent actions daily. After ten days stop the acid and give **Pepsin** and **Pancreatin**, the pepsin immediately after meals and the pancreatin about an hour and a half afterwards. During the first part of the treatment red-meat diet should be interdicted, but finally should be gradually restored.

In the neurasthenic cases the treatment is the same, with the addition of rest, in rare cases putting the patient to bed for two or three weeks.

REFERENCE.—1"New York Med. Journ.," Oct. 4, 1890.

VITREOUS (Opacity of).

Synopsis.—(Vol. 1891, p. 491.) Ford incises the sclerotic and withdraws a part of the vitreous by a syringe with a nozzle of large calibre, repeating the operation frequently in stubborn cases.

VOMITING (of Pregnancy).

Synopsis.—(Vol. 1891, p. 39.) ℞ Menthol, gr. 15 ; Sp. Vin. Rect. ʒvj ; Syr. ʒj, M. Sig. A teaspoonful hourly for vomiting of pregnancy.

VULVA.

Synopsis.—(Vol. 1891, p. 11.) **Aristol**, 1 part to 10 of **Zinc Starch**, as dusting powder in eczema vulvæ.

WORMS.

Synopsis.—(Vol. 1891, pp. 10 and 14.) **Areca Nut**, gr. 60 to 120, followed by **Aperient** is a useful tænicide. **Cactus Grandiflorus**, gr. 2 to 10, has been used as an anthelmintic.

WOUNDS.

Synopsis.—(Vol. 1891, p. 11.) **Aristol**, 1 part to 10 of **Zinc Starch**, is a useful dusting powder.

XANTHELASMA.

Synopsis.—(Vol. 1890, p. 528.) Application of a layer of **Collodion**, containing 10% **Sublimate**, which causes a superficial eschar; use of **Galvano-cautery.**

YELLOW FEVER.

Frank J. Wethered, M.D.

Dr. James Thorington states in the "American Journal of the Medical Sciences" for January, 1890, that in an experience of seven years' active practice on the Isthmus of Panama, where cases of yellow fever were constantly under his observation, he has tried many kinds of treatmeat in yellow fever. He noted that in the majority of cases death was attributable to nausea and vomiting and not to suppression of the urine, and he concluded that if he could find some means of quieting this nausea the possibilities of recovery would be greatly increased. **Cocaine,** as an antiemetic, was suggested to him by Dr. Jennings, and he states that he has tried it in every case since, the results being most gratifying.

In summing up the value of cocaine in the treatment of yellow fever, the author states it to be almost a specific, in his experience doing more to cure yellow fever than any other drug he has ever tried, taking away or removing all nausea and vomiting, acting as a diuretic, and as an excellent and sure "heart-tonic and stimulant."

Dr. Manuel Dagnino, of Maracaibo, Venezuela, who has had considerable experience in yellow fever, describes his usual method of treating the disease thus: The first thing to do when any suspicion of yellow fever has arisen is to soothe the patient's alarm and put him under as suitable conditions of temperature, ventilation, etc., as possible. The stomach and intestines are usually best cleared out by an emetic and a purgative draught or enema, and a stimulant foot-bath given, followed by massage of the body, and especially of the parts about the waist, practised with oil and spirit. Sinapisms should then be applied, and **Acetate of Ammonia** in considerable doses prescribed. Leeches or venesection may be required. Pain about the waist, which is frequently most distressing, may generally be relieved by dry cupping. A **Quinine, Calomel,** and **Rhubarb Pill** is ordered every two or three hours, and cold or iced acid drinks, and no food allowed for at least three days. In order to combat the black vomit, small and frequent doses of **Chlorate of Potassium** with **Bicarbonate of Sodium** are very useful. **Lime-water,** with a minute quantity of **Opium,** is also a valuable remedy, but creasote, which is sometimes recommended, has not seemed to Dr. Dagnino to diminish, but rather to increase, the black vomit.

Since the introduction of antipyrin, he has given it alone or combined with quinine in cases where the temperature has risen to 40° C., as he believes that a very high temperature alone is a fruitful source of accidents in this and all other fevers.

REFERENCES.—"Therap. Gaz.," March, 15, 1890, Jan. 15, 1891; "Lancet," Nov. 1, 1890.

Part III.

Recent Advances in Bacteriology.

By M. ARMAND RUFFER, M.A., M.D.

EXPLANATION OF PLATES.

Plate V.—A, Pneumococcus from Sputum of a Case of Pneumonia; *B*, Tubercle Bacilli from Fresh Culture; *C*, Streptococcus of Erysipelas from an Old Culture; *D*, Staphylococcus Aureus from an Old Culture.

Plate VI.—E, Section through Mucous Membrane of Peyer's Patch of Rabbit showing Phagocytes containing Bacilli in their Interior; *F*, Bacillus of Typhoid Fever; *G*, Section through most superficial part of Diphtheritic Membrane. Phagocytes containing Bacilli in their Interior.

On the Etiology of Suppurations occurring during the course of Infectious Disease.—Of all the pathological processes which from time immemorial have occupied the thoughts of medical investigators, not one has attracted so much attention as suppuration. In almost every disease the formation of pus may occur as a complication, and not unfrequently a fatal termination is directly caused by the formation of an abscess.

A patient struck down with hemiplegia, for instance, will almost certainly die if a sore forms on the buttock, for, when suppuration has once started in that region, it spreads without interruption till the patient perishes from exhaustion, or from the absorption of poisons formed in the putrid sore.

The theories framed to explain the occurrence of suppuration are innumerable, and, lately, some of the actual causes have been ascertained by scientific experiment. When Virchow first revolutionized pathology by his immortal researches, pathologists supposed that every form of irritation was capable of producing suppuration. At that time, however, and even before, a few enlightened minds maintained that pus was a specific production, due to a specific cause; and Gaspard, in 1822, proved that pus injected under the skin, or into serous membranes, gave rise to local suppurations; while its injection into the veins was followed by the formation of intravenous abscesses. The solid constituents of pus were proved by Chauveau to be the actual agents in causing suppuration, as filtered pus,

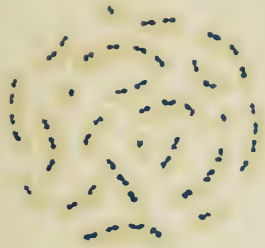


Fig A.

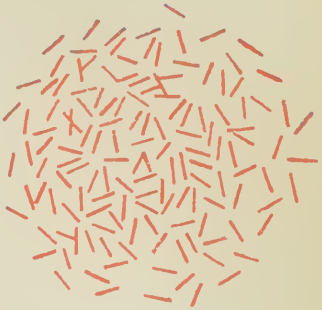


Fig. B.

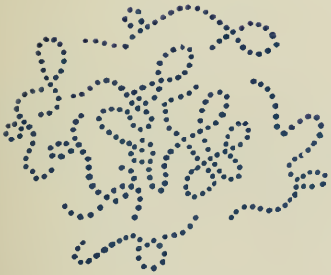


Fig. C.

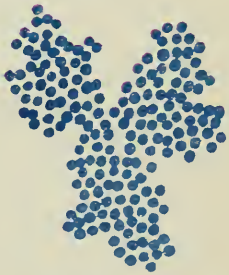


Fig. D.

Alice M. Kuftier, del.

always proved harmless. Later on, the researches of Lister, Ogston, Pasteur, Koch and others drew attention to the presence of micro-organisms in pus, and it was soon recognized that microbes were the causative agents of suppuration. As is usual in the case of new discoveries, some of the followers of the new bacteriological school were carried too far by their enthusiasm, and maintained that micro-organisms were the *only* agents capable of producing suppuration—a theory which is not tenable.

The organisms which most frequently produce suppuration belong to two groups of micrococci, *i.e.*, staphylococci and streptococci *(see Plate V, Fig. D)*. The suppuration caused by staphylococci has a tendency to remain localised, as, for instance, in a boil, or in a bone; whereas an abscess caused by streptococci is not unfrequently followed by metastatic abscesses in various parts of the body. Thus erysipelas produced by streptococci may gradually wander over the whole body; and in puerperal fever, a disease due to an organism similar to, if not identical with the streptococcus of erysipelas, abscesses form in every part of the body, the specific microbes being present in each centre of suppuration. In cases of ulcerous endocarditis the same organism is found, and, in short, the various kinds of streptococci are the most frequent cause of the two classes of diseases which clinicians describe as septicæmia and pyæmia.

Both classes of micro-organisms give rise to different symptoms, varying in intensity, duration, and gravity according to the place to which they ultimately find their way. Strange as it may appear, a boil on the neck and acute osteomyelitis are caused by the same microbe, namely, the staphylococcus pyogenes aureus *(see Plate V, Fig. D)*. Purulent peritonitis and erysipelas of the face are both due to the same agent, for in both the streptococcus pyogenes *(see Plate V, Fig. C)*, and no other organism, is met with.

The suppuration produced by micro-organisms is partly due to the micro-organisms themselves and partly to the poisons secreted by them, thus (Scheurlen) it may be produced by injecting a sterilized extract of putrid meat, or of an alkaloid, namely, cadaverin, formed during the putrefaction of meat (Grawitz). Moreover, a sterilized culture of the staphylococcus aureus injected under the skin or into the anterior chamber of the eye induces the same process. Leber extracted from cultures of the staphylococcus aureus a pure crystalline body, soluble in alcohol, which produces intense inflammation and suppuration in animals; Christmas isolated from cultures of the same micro-organism another substance, soluble in water, insoluble in alcohol, easily destroyed by heat, but having similar physiological

effects. More recently (Massart and Bordet, Gabritchewsky and Buchner) it has been shown that the sterilized cultures of various micro-organisms introduced under the skin attract leucocytes in incredible numbers.

Micro-organisms, however, are not the only agents of suppuration. Croton oil (Cohnheim) turpentine, mercury, petroleum (Christmas), chloride of zinc, and nitrate of silver have all the power of producing abscesses when injected in sufficient quantities subcutaneously; but whereas it is almost impossible to obtain any effect by the injection of these substances in rodents, the same poisons invariably produce intense suppuration in dogs.

Passing now to the study of the causes of suppuration occurring in man during the course of an infectious malady, we may begin with the abscesses often accompanying the most common of infectious diseases, *i.e.*, tuberculosis *(see Plate V, Fig. B)*. Koch found various organisms, such as the bacillus pyocyaneus and the bacillus tetragenus, in tubercular cavities, and Watson Cheyne saw micrococci invading a vessel, in a case of tubercular ulceration of the tongue. It is chiefly, however, to Babes that we owe our knowledge of the various micro-organisms met with in suppurating tubercular foci. In seven out of twelve cases of tubercular meningitis (Babes) various microbes, together with the bacillus of tuberculosis, were met with in the cranial cavity. In two cases the pneumococcus was found in the meninges; in two others, the streptococcus pyogenes; and in a fifth, the staphylococcus aureus. In two more cases the same observer isolated peculiar bacilli, which, inoculated under the meninges of a rabbit, reproduced meningitis. In a patient dying of tubercular purulent otitis, the bacillus pyocyaneus, together with saprophytic bacillus, was discovered; while in a second case of otitis, the bacillus of tubercle and a large number of oval, saprophytic bacilli were desseminated in the brain, in an abscess of the neck, in the spleen, and in the pleuritic fluid on the right side.

The bacillus of tuberculosis *(see Plate V, Fig. B) alone* was isolated in three out of seven cases of osteo-myelitis, and in these three patients the progress of the disease was exceedingly slow. In the four other cases, however, the streptococcus pyogenes *(see Plate V, Fig. C)* was also present, and in one case this micro-organism was the cause of the pericarditis which proved fatal to the patient.

The streptococcus pyogenes was also discovered in the pus of two cases of tubercular subcutaneous abscesses. In one patient the same organism was isolated also from the spleen and the fibrous exudation covering the pleura. Needless to say, in tubercular abscesses freely exposed to air, such as a suppurating cavity in the pharynx, lung, or

intestinal tract, numerous microbes, pathogenic and non-pathogenic, find all the conditions necessary for their existence.

The streptococcus pyogenes, the staphylococcus aureus and various saprophytic organisms have also been recognized in the purulent exudation of man and animals suffering from tubercular peritonitis. In a case of metritis and salpyngitis, accompanied by miliary tuberculosis, the staphylococcus aureus and saprophytic bacilli were present in the blood of the heart, the lungs and the peritoneal abscess.

The experiments of Koch prove that a pure culture of tubercle bacilli produces suppuration in animals, and that this suppuration varies according to the state of the animal at the time of the inoculation.

The suppurations accompanying tuberculosis therefore are due, firstly, to the tubercle bacillus itself; secondly, to the poisons secreted by that bacillus; and, thirdly, to other micro-organisms complicating the primary infection, or the poisons secreted by these microbes.

Let us now turn to another disease, namely, diphtheria. This malady is caused by a specific organism, the bacillus diphtheriæ, which was first described by Klebs, then isolated by Löeffler, whilst the action of its poison has been investigated more especially by Roux and Yersin. The writer has shown that in a typical case of diphtheria this bacillus exists in a state of almost absolute purity at the surface of the false membrane *(see Plate VI, Fig. G)*. In the depths of the membrane, however, the number of bacilli gradually decreases, so that in the deepest parts none at all are met with. The writer, in his paper on this subject, proved that the micro-organisms were arrested by the amœboid cells present in the membrane.

It is a remarkable fact that almost all the authors who have treated of diphtheria were unable to find the specific bacillus in the internal organs of animals dead of that disease. Löeffler, for instance, never found the bacillus of diphtheria except at the point of inoculation. Roux and Yersin inoculated a number of guinea-pigs subcutaneously, and killed them at varying intervals of two hours apart. After four hours, the point of inoculation was highly œdematous, and the bacilli increased in number up to the sixth or eighth hour, some of them being enclosed in leucocytes: but after that time their number gradually decreased, and when the animals died there were fewer microbes at the point of inoculation than six or eight hours after the inoculation. Moreover, the internal organs were absolutely free of bacilli. Thus, a rabbit inoculated intravenously with one cubic centi-

mètre of a pure culture of diphtheria bacilli was killed twenty-four hours afterwards, and its spleen removed aseptically and placed in bouillon, at a temperature of 37° C. The bouillon remained perfectly sterile, showing that no diphtheria bacilli were present in that organ.

Now, what is the cause of the suppurations in various parts of the body which often accompany diphtheria in man? Are they due to the diphtheria-bacillus, or are they produced by some other micro-organisms? In the first place let us study what happens when the diphtheritic process in man is accompanied by a purulent discharge from the respiratory passages. The subject has lately attracted considerable attention, and Barbier has written an admirable paper on this subject.

Observation showed that the micro-organism which, together with the specific bacillus is always present in purulent diphtheria, is a streptococcus (streptococcus β), the subcutaneous inoculation of which into animals is almost invariably followed by death.

Experiments have shown that this microbe plays an important part in the causation of some of the symptoms of the disease. A drop of culture of the streptococcus placed on the mucous membrane of the vagina of a female guinea-pig produces only transient inflammation of the vaginal mucous membrane; but, if instead of introducing the streptococcus alone, a mixture of streptococci and diphtheria-bacilli be inoculated, an intense vaginitis sets in, and the vagina becomes lined with a reddish, sero-fibrinous exudation, which gradually extends to the vulva. The latter is soon covered with yellowish false membranes, which not unfrequently become tinged with the red colouring matter of the blood, and then assume a brownish hue. The disease may be fatal, but the animals often recover after five or six days. Another micrococcus (micrococcus γ) often found in cases of diphtheria also seems to possess the same properties.

Two characteristic forms of diphtheria in man correspond to the presence or absence of the streptococcus in the false membranes. In the first class of cases, the streptococcus is absent, and the disease is characterized by the following symptoms. The throat is not very sore; the false membranes are quite typical, white in colour, and may be easily stripped off in patches. The mucous membrane is not very red or swollen, whilst the glands are but slightly or not at all enlarged. There is no discharge from the nose, but the disease tends to spread to the larynx and lungs, forming firm, tubulated false membranes; and after tracheotomy, the cannula remains almost dry.

When, however, the streptococcus is associated with the diphtheria

bacillus, the symptoms are extremely different. The face is pale, swollen, not unfrequently cyanosed, the complexion leaden, the skin shiny, the upper lip red and the nostrils excoriated. The patient keeps the mouth open, and the breath is horribly fœtid. Deglutition is painful, owing to the extremely red and congested state of the mucous membrane; the false membranes are soft and almost purulent, breaking up easily. The neck is enormously swollen, owing to the increase of the glands and the œdema of the surrounding tissues; the discharge is abundant, sero-fibrinous, sero-sanguineous, or sanguineous in character, and runs away from the nose or from the cannula when tracheotomy has been performed, the patient frequently dying from purulent bronchitis or from a peri-tracheal abscess. After death, the same streptococcus is found in the heart, in the blood, the heart's valves (ulcerous endocarditis), in the pus of lymphatic glands, in the joints, if one of these suppurate during the course of diphtheria (Heubner and Bardt), and in the pus of retro-pharyngeal abscesses.

The conclusion to be drawn, therefore, is that whereas we do not know whether the bacillus of diphtheria can or not give rise to suppuration, there is positive proof that the secondary abscesses occurring during the course of diphtheria are caused by the presence of other micro-organisms, and, more particularly, by this streptococcus.

Very different results are obtained by studying another infectious disease, namely, pneumonia, which is caused by a specific micrococcus, the pneumococcus of Talamon-Fräenkel *(see Plate V, Fig. A)*. This micro-organism has distinct anatomical and physiological characters, and has been found by competent observers in all cases of acute croupous pneumonia.

Some of these abscesses occurring during the course of pneumonia are evidently due to other micro-organisms than the pneumococcus; for instance, to the streptococcus pyogenes, which has been isolated from abscesses of the lung, endocardium, myocardium or connective tissue, complicating pneumonia.

On the other hand, abscesses formed in various parts of the body during the course of pneumonia are often caused by the pneumococcus. This microbe has been met with in purulent pleurisy, purulent pericarditis and peritonitis, in abscesses of the joints, in purulent cerebro-spinal meningitis, in ulcerous endocarditis, and in abscesses occurring during the course of pneumonia in the subcutaneous tissue, liver, spleen, kidneys, bones, muscles, nose, eye, genital organs and salivary glands.

The pneumococcus, therefore, can produce abscesses during the course of, or after, pneumonia, but it has been abundantly proved *that the pneumo occus may produce suppuration in patients who are not, and never have been, suffering from pneumonia.*

In 1886 and 1887, Netter described cases of purulent pleurisy without pneumonia, in which the pneumococcus was found in the pleura. Since that time the same observer has continued his investigations, and he finds that in 18·9 per cent. of cases of purulent pleurisy unaccompanied by pneumonia occurring in the adult, and in 50 per cent. of the cases of the same kind in children, the suppuration in the pleura is caused by the pneumococcus ; and that the prognosis in such cases is a favourable one on the whole. These researches have been confirmed and extended by Finkelstein, Fräenkel, and Renvers.

Jaccoud and Netter have also observed three cases of primary ulcerous endocarditis due to the action of pneumococci, although the patients had never suffered from pneumonia. Weichselbaum has made similar observations, and some of these patients succumbed to purulent meningitis, due to the presence of the pneumococcus in the meninges.

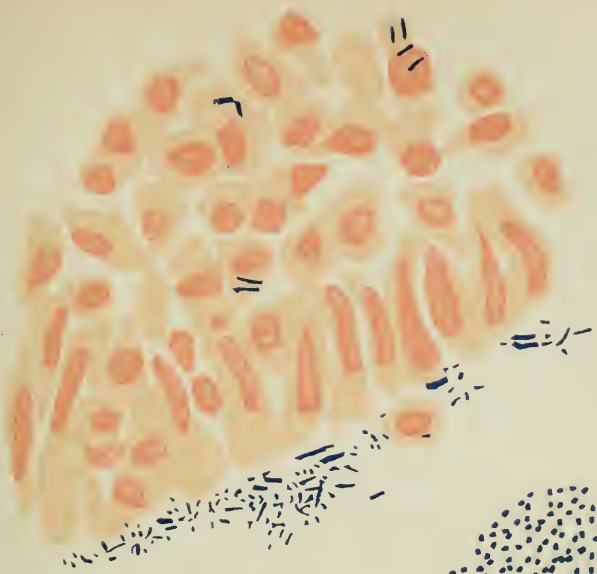
The pneumococcus is also in all probability the most frequent cause of purulent cerebro-meningitis. Netter has made a careful bacteriological examination of thirty fatal cases of purulent cerebro-spinal meningitis, and in sixteen of these he found pneumococci only. Pneumococci were also met with in twenty-seven out of forty-five cases of cerebro-spinal meningitis described by Weichselbaum, Monti, Banti, Patella, and others.

Purulent otitis is also not unfrequently due to the presence of the same micro-organism in the ear, even when the patient is not, and never has been, suffering from pneumonia, as in the cases reported by Zaufal, Netter, Moos, Kuher, Lewry, etc. The course of the disease is somewhat more rapid than when the otitis is due to streptococci, and the prognosis is generally favourable, as serious complications are rare. Nevertheless, Leyden has seen inflammation of the ear followed by purulent meningitis, and in some cases recorded by Zaufal, Moos, Verneuil, and Netter, the otitis ended in periostitis of the mastoid process.

Lastly, pneumococci have been found in suppurations of the nasal fossæ and frontal sinuses, in purulent peritonitis, in abscesses of the liver, etc., unaccompanied by any symptoms of pneumonia.

The frequency with which the pneumococcus is the active agent in producing suppuration is to be accounted for by the fact that it is met with in the mouth of perfectly healthy subjects, of persons

Fig. E.



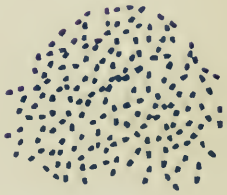
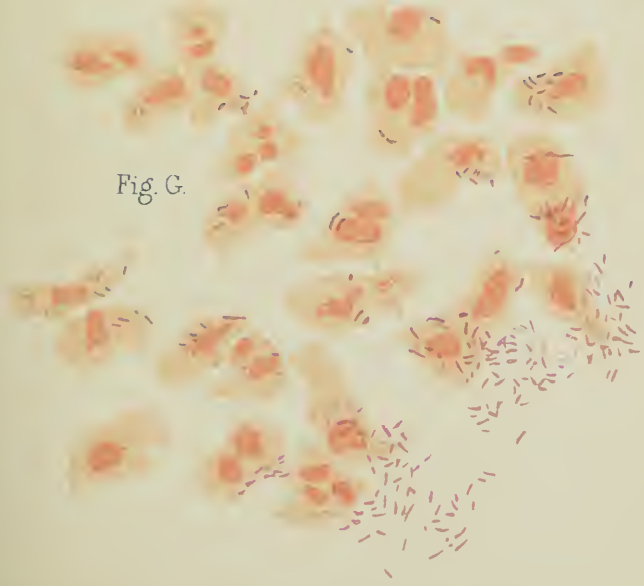


Fig. F.

Fig. G.



Alice M. Rufter. del

even who have never suffered from an attack of pneumonia. This fact, pointed out by Pasteur, has been confirmed by Sternberg, Fräenkel, Biondi, and, more especially, by Netter. The last observer first showed that if a man has once suffered from pneumonia, the pneumococcus remains in the saliva for an extremely long period. He also isolated the same microbe from the mouths of twenty out of one hundred persons who had never had pneumonia; and Goldenberg has demonstrated its presence in 50 per cent. of the persons he examined. This being the case, it is easy to understand that the pneumococcus may, under certain conditions, wander into the nose or frontal sinuses, or through the Eustachian tube, into the tympanic cavity, and thence into the meninges. In a case reported by Leyden, for instance, purulent meningitis due to the presence of pneumococci followed an otitis media caused by the same micro-organisms. Netter has reported the history of a patient who had a tumour of the cribriform plate and died of meningitis caused by pneumococci. The *post-mortem* examination showed that the prolongations of the tumour dipped into the nasal fossæ, which were thus in communication with the cranial cavity. It is easy to understand how, in such a case, the pneumococci present in the mouth wandered into the cranial cavity. A similar case has been described by Oetmann, and more recently both Weichselbaum and Welgert have drawn attention to the frequency with which nasal suppurations are seen at the *post-mortem* examination of patients dying from meningitis.

Moreover, the constant presence of pneumococci in the mouth explains the frequency with which the same organisms are found in abscesses in other parts of the body.

Let us now pass to the study of the abscesses met with in cases of typhoid fever. It has been known for a considerable time that in every case of typhoid a special bacillus is met with in the intestinal ulcerations, as well as in the lymphatic glands, spleen, liver, lungs and tissues of the typhoid patient. This bacillus *(see Plate VI, Fig. F)* has certain characteristic reactions which it is unnecessary to dwell upon here, and is now recognized by bacteriologists as being the cause of typhoid fever, just as the anthrax bacillus is acknowledged to be the cause of anthrax.

It is unnecessary to dwell on the frequency with which suppuration takes place in the course of typhoid fever. It is easy to understand that this must be the case, as the characteristic ulcers open into the intestinal tract, *i.e.*, into a cavity crammed with various kinds

of micro-organisms. The floor of such ulcers is an open door, so to speak, through which these parasites find their way into the tissues. We need not wonder, then, at often finding not only typhoid bacilli, but the other microbes of suppuration, in the abscesses which occur during the course of typhoid fever. The staphylococcus pyogenes aureus has been isolated from an abscess of the parotid and from the pus of a subcutaneous abscess, occurring during the course of typhoid fever (Fräenkel and Simmonds); and the same result has been obtained in two other similar cases (Chantemesse et Widal). Th. Dunin examined the pus of several cases of otitis media supervening during typhoid fever, and demonstrated in all the presence of the staphylococcus pyogenes aureus, and staphylococcus pyogenes albus. The venous thromboses coming on during the progress, and after the decline of the disease, he attributes to the same micro-organisms. Similarly the laryngeal and pharyngeal abscesses which make their appearance during typhoid fever, seem to be caused by the ordinary micro-organisms of suppuration.

Nevertheless, in a great many cases the bacillus of typhoid fever played a part in the production of abscess. G. Roux isolated the typhoid bacillus, together with the microbes of suppuration, from a case of purulent perimeningitis in which the spinal canal was filled with pus.

The same observer has described the following interesting case : A man, aged twenty-four years, after suffering considerable pain in the left flank, died on the eighteenth day of typhoid fever. At the *post-mortem* there was no peritonitis *nor swelling of the Peyer's patches.* The spleen, however, was large, and on the antero-inferior surface of that organ there was an abscess as large as a walnut. Miliary abscesses were also found in the kidneys. The bacteriological examination of the abscess of the spleen revealed the bacilli of typhoid fever in a state of purity.

A. Fräenkel found typhoid bacilli in the pus of an encysted peritonitis, one hundred and forty-seven days after the onset of typhoid fever. Ebermeyer examined the pus in two cases of suppurating periostitis occurring during the course of typhoid fever, and found typhoid bacilli, and no other micro-organisms, in both. According to this observer, the typhoid bacilli reached the periosteum through the medulla of bones, as in another case he succeeded in demonstrating the typhoid bacilli in the medulla of one rib and the femur of a patient dead of typhoid fever.

Another bacteriologist (Achalme) found the typhoid bacillus in a subperiosteal abscess of the tibia of a typhoid patient. Here, again, other micro-organisms were absent.

More lately, Colzi isolated the typhoid bacillus from an abscess of the thyroid gland of a patient convalescent from typhoid; and Barbacci obtained the same micro-organism from a subperiosteal costal abscess in another case of typhoid.

In man, therefore, the bacillus of typhoid fever may, like the pneumococcus, occasionally produce abscesses in various parts of the body. There is, however, a distinct difference between the pneumococcus and typhoid bacillus as causes of suppuration, for whereas the pneumococcus has been isolated in cases where no symptoms of pneumonia existed, it has not been conclusively proved that the typhoid bacillus ever penetrates into the body without giving rise to the symptoms and characteristic ulcerations of typhoid fever. In the literature of this subject the writer has come across only one case supporting the idea that the typhoid bacillus may occasionally produce a general disease not presenting the typical pathological appearances of typhoid fever (Vaillard and Vincent).

In some maladies in which ulceration and suppuration frequently occur, in leprosy for instance, syphilis, scarlet fever, chicken-pox, measles, etc., the abscesses are always produced by microbes other than those causing the primary disease. In fact, in most of these maladies the specific agent has not yet been discovered.

Similarly, the microbes isolated by some observers from the pustules or from the metastatic abscesses in various organs of cases of small-pox, and from the pustules of vaccinia, were simply the microbes of suppuration, or other organisms which had not any casual relation to the disease; and the same holds true of the microbes described as being met with in syphilitic ulcerations.

The greatest light on the etiology of suppuration occurring in man during the course of infectious disease has been obtained from experiments on animals. It has been proved that the inoculation of innocuous micro-organisms may prove fatal provided another kind of micro-organism be inoculated at the same time with it. The bacillus or quarter-evil, for instance, injected into rabbits produce no evil effects (Roger), but if introduced into the same animals together with a culture of the micro-bacillus prodigiosus, or the sterilized extract of the culture of the same micro-organism, the inoculation invariably proves fatal. Monti found that old and attenuated cultures of the staphylococcus pyogenes, or of the staphylococcus aureus, or of the pneumococcus always proved fatal provided a culture of an innocuous micro-organism such as the proteus vulgaris were injected at the same time.

The most interesting experiments on this subject, however, were made by Monsieurs Vaillard and Vincent. These observers demonstrated the facts that when a culture of tetanus, so attenuated that it would not produce tetanus, is inoculated with the micro-bacillus prodigiosus the animal invariably dies within a short space of time, with well-marked tetanic symptoms. Enquiring further into this fact they attempted to answer the question as to whether this action was due to the soluble poisons contained in the culture of the micro-bacillus prodigiosus or to the presence of the bacilli themselves. It would appear that the second hypothesis is the correct one, for if the culture of tetanus be simply mixed with the *filtered* culture of the micro-bacillus prodigiosus, containing no micro-bacilli, it does not produce tetanus. The same result is obtained if a culture of the micro-bacillus prodigiosus previously sterilized by heat is used for the experiment.

If the bacilli of tetanus which have been deprived of their virulence by methods which we need not describe here, be introduced into the subcutaneous tissue of a guinea-pig, no evil result follows, but if the small wound produced by the operation be left open, so that it become contaminated with the common micro-organisms of putrefaction or suppuration, the animal invariably dies of tetanus within a short space of time. It is a suggestive fact that when both kinds of micro-organisms are thus inoculated, the leucocytes which have wandered to the spot, absolutely decline to take into their interior the tetanus bacilli, whereas they absorb with the greatest rapidity the micro-bacillus prodigiosus.

It has also been experimentally proved that the chemical poisons secreted by a certain microbe, if injected into an animal, predispose it to infection by the same micro-organism. A few examples will show what is meant. Inoculation of a few drops of a culture of the bacillus pyocyaneus (Bouchard) produces no symptoms in guinea-pigs, but if a few minutes before the culture is introduced, the sterilized extract of a culture of bacillus pyocyaneus be injected under the skin, the animal quickly succumbs, and the characteristic bacilli are found in all its organs. Vaillard and Vincent have shown that the same remark is true of the bacillus of tetanus, and that when the bacilli of tetanus are injected without any tetanic poison adhering to them, they are powerless to produce the disease. Similar results have been obtained with other micro-organisms by Herman, Rodet and Courmont, Roger and Metschnikoff. Need we wonder then, that in man the presence of the tubercle or typhoid bacillus or of the pneumococcus, predisposes to infection by the ordinary microbes of suppuration, and more-

over to the generalization of the specific microbes causing the disease.

Now, how do the micro-organisms causing secondary abscesses penetrate into the system? We must remember that these microbes are present even in the healthy man, in the cavities which are in contact with the external air. The various staphylococci and streptococci are found throughout the whole length of the alimentary tract and in the upper part of the respiratory tract. They are always ready to creep into the tissues, but at the same time are continually arrested by the barrier of epithelium and amœboid cells. In some parts of the alimentary tract indeed, such as the tonsils and Peyer's patch, the writer has shown that a constant struggle is going on between the microbes and the amœboid cells of the adenoid tissue, and that in the healthy animal, the microbes are never able to penetrate into the lymphatics or blood vessels *(see Plate VI, Fig. E)*. In his paper on this question written two years ago the writer used the following words: "The struggle between micro-organisms and the animal cells is a physiological process always going on in the tonsils and Peyer's patches, the microphages and macrophages being victorious in the healthy animal. If these structures are weakened from any cause, *e.g.*, over-fatigue, cold, nervous shock, a local disease follows the multiplication of micro-organisms in the tonsils. An increased emigration of phagocytes may limit the process to the tonsils even then, or the micro-organisms may break through the barrier of these cells, invade the animal's body, and the disease becomes a general one."

Since this was published, the truth of what the writer stated as a hypothesis has been abundantly proved. Without going fully into the experiments made by Pasteur, Nocard and Roux, Platania, Canalis and Morpurgo, Arloing, Charrin and Ruffer, Roger and Herman, it may be mentioned that Charrin and Roger have proved that white rats, which, as a rule, are immune against anthrax, take the disease readily when the animals suffer from muscular over-exertion; and Bouchard has shown that when a healthy animal is exposed to the influence of cold for a considerable time, the micro-organisms readily pass from the alimentary canal and lungs into the blood; whilst the influence of hunger as a predisposing factor has been ably studied by Italian observers. The exhaustion produced by fever, want of food, etc., during the course of an infectious disease, must necessarily help the microbes of suppuration in their endeavours to penetrate into the internal organs.

There is one point of interest in these researches on which the

writer may perhaps be allowed to dwell. Some years ago, it would have been difficult for pathologists to imagine that three such different diseases as pneumonia, otitis media, and cerebro-spinal meningitis might be caused by one and the same microbe; and yet this is undoubtedly the case, and indeed this is easily understood if we examine it by the light obtained from *experiments on animals*.

Experimental evidence has made bacteriologists familiar with the fact that the lesions produced by one and the same microbe introduced in the same manner into animals, may produce extremely different effects according to the age, sex, genus, etc., of the animals used in such experiments.

Moreover, according to the methods of inoculation used, the disease may assume different clinical appearances. If a given quantity of the bacillus of typhoid be injected under the skin of a guinea-pig, a localised abscess is produced and the animal recovers; the bacillus in such cases being found at the point of inoculation only. If the same quantity be injected into the peritoneum, a purulent peritonitis sets in, the animal dies within twenty-four hours, and the bacilli lie scattered throughout the organs of the body. If the inoculation be made into the veins, no result follows, the animal to all appearances remaining in perfect health.

The lesions also vary with the strength of the virus used for inoculation. If, for instance, a virulent culture of anthrax be inoculated into a rabbit's ear, the animal dies of generalized anthrax, but no sign of an abscess appears at the point of inoculation; but if another animal of the same age, sex and species be inoculated in the same place with the first vaccine of anthrax, a distinct abscess forms at the point of inoculation and the disease remains localised to that spot.

Needless to say, our knowledge of what happens in the human subject is not so accurate; but judging from the evidence obtained by experiments on animals, it may be assumed that similar processes take place in man also. The disease produced by the pneumococcus for instance, probably varies in intensity in its pathological appearances, according to the virulence of the micro-organism, and according to the place where it finds access to the internal cavities. Finding its way into the lungs, it will produce pneumonia; into the cerebro-spinal system, it will set up cerebro-spinal meningitis; into the internal cavities of the ear, it will produce otitis, etc., and it stands to reason that the prognosis must necessarily be affected by the localisation of the disease, and by the previous state of health of the patient.

The same quantity of pus must produce widely different effects, according to whether it is contained in the bony cavity surrounding the cerebro-spinal axis, or in the knee-joint. And yet both cerebro-spinal meningitis and purulent effusion into the knee-joint are due to the same cause.

A few lines may be devoted to the consideration of how the suppurations occurring during the course of an infectious disease may best be avoided. It has been shown that many of these microbes which are the cause of suppuration, are constantly present in the human body, on the skin, in the alimentary canal, and in the upper parts of the respiratory tract. Those present on the skin, we cannot altogether destroy, for it is clearly impossible to render the skin of man aseptic from head to foot; but it is in our power to prevent their accumulation by ordinary cleanliness and the formation of cracks and fissures, through which the organisms might gain access into the system.

In the writer's opinion, however, the most important point which has to be attended to in order to prevent the occurrence of secondary suppurations, is to pay due attention to the state of the alimentary canal. The intestinal tract from beginning to end is a suitable cultivating ground containing the material necessary for the growth and luxuriant multiplication of microbes. True, in the normal state, they are prevented from passing into the system, but even then their chemical products pass into the blood continuously, as is proved by the fact that the quantity of indigo-producing substance in the urine is proportional to the amount of indol present in the intestine. Now, in another part of this paper we have shown that the chemical substances produced by one microbe when injected into an animal predisposes that animal to infection by other kinds of microbe: and it has been experimentally demonstrated by Bouchard that certain forms of suppuration in man, *e.g.*, boils, may be immediately arrested by rendering the alimentary canal aseptic.

It would carry us too far to enter here into the discussion of the various means by which this can be effected; but it may be mentioned that there are two chief methods which, combined together, will produce the desired result, firstly, the prevention of putrid accumulations, by producing regular action of the bowels, and secondly by the ingestion of insoluble antiseptics, such as charcoal, naphthol, bismuth, which without poisoning the patient, prevent and altogether arrest the putrefaction which normally takes place in the alimentary canal.

Before concluding this paper, the writer may be allowed to point out how closely the observations obtained from human pathology correspond with the data gathered from experiments on animals. And may we not hope that, in time, results obtained on animals will be successfully applied to human therapeutics? Moreover he would also draw attention to the fact that although this newly-gained knowledge has been the direct result of both clinical and experimental medicine, yet the researches of clinicians have been mainly guided by the knowledge previously gained by experimentation. And yet further, the writer would like to impress on his readers the fact, that if pathology is to advance in future, every new pathological theory must be controlled, and its truth fully established by experiments on animals.

Medical Photography.

BY

ANDREW PRINGLE.

Medical men are daily realizing more and more the value of photography, and more and more using it, as the best means of recording their observations. In many, if not most of the hospitals in this country, there is some kind of arrangement for obtaining photographs, though at present these arrangements are not as a rule officially recognized nor subsidized. There is but little doubt, however, that the day will come —and that soon—when each hospital and medical school will have its official photographer and its organized photographic department. And further, it is well known that not a few medical men use photography in their private practice, or at least in their private consulting-rooms. Photography of microscopical sections and preparations is now very common, and we frequently find papers read before societies illustrated by photographs handed round in the form of "prints," or shown on a screen by the medium of "lantern-slides."

For this tendency towards photography there are many good grounds. We get by photography a thoroughly trustworthy record of what we wish to fix on the memory; we obtain the means of showing our experiences to others, and for teaching purposes this is a consideration of great moment; and we obtain these results quickly and cheaply. The reader of a paper before a learned society, or a teacher of students, cannot but own the value of a process by which he is enabled to show the matter of his observations on a large scale to a great number of persons at one time, and with every facility for pointing out the special part of the subject which he wishes to discuss. We have seen students looking through many microscopes at a series of preparations, no two perhaps directing their attention to the same detail, and not one perhaps being quite sure as to what particular point the teacher is discussing. If the object is projected on a large screen by means of a photographic lantern-slide the lecturer can place his pointer on the special part he is discussing, and doubt is impossible. Many other advantages of photography might be mentioned, but our space is limited.

The subject with which we have to deal may very fitly and conveniently be divided into two heads—Makro-photography, and Micro-photography. The former will include photography of patients, parts of patients, and removed tissues and organs. The latter—which is better called photo-micrography (as the term above is used for another branch of photography) covers photography of the microscopical image, and may almost be called a branch of science by itself. The attention of the reader will be called first to ordinary photography, where patients or parts of patients are the subjects.

MAKRO-PHOTOGRAPHY.

For this branch of work the requisite appliances are not numerous nor very costly, but it will be well to obtain the best instruments at first, as imperfect or makeshift appliances are always costly in the end. In particular the lens should be of as good quality as can be obtained. Every one knows in a general way the appearance of a camera, and the best kind of camera for this work is that used in the studio of a professional portraitist. It need not be portable, for it has not to be carried about, and it should have what is called a "repeating back," so that two negatives may be made in quick succession without loss of time or serious re-arrangement of the sitter. A plate $8\frac{1}{2}$ by $6\frac{1}{2}$ inches ("whole-plate") may be used, so that by two exposures we get two "cabinet" pictures. Or a "half-plate" camera may be preferred—$6\frac{1}{2}$ by $4\frac{3}{4}$ inches—in which case we shall get two pictures of so-called "carte" size. Or in either case by using an ordinary "dark slide" in place of the repeating back we can take a picture the full size of the plate we use. The carte size is useful, for it is generally large enough to show all that we require, and it is very convenient for making lantern slides by the simplest process, viz., by "contact."

The lens is a very important point. We require rapidity of action, and that can only be got by a certain amount of sacrifice of other qualities. What we require is a "portrait" lens working at need with an aperture one-fourth or one-fifth of its focal length. For the half-plate camera a lens of 6 inches focal length will suffice, for the whole-plate 8 or 9 inches will do. But it is to be understood that these focal lengths are for use with the repeating backs; for use on the whole of their respective plates the lenses ought to have greater focal lengths—say 8 and 11 inches respectively. This portrait type of lens is dearer than the type used for landscape, but it is often necessary to have the rapidity of action which is found in the portrait lens alone. At the same time we do not deny that a "rapid rectilinear" lens for landscape used with a large aperture may answer very well,

especially if we use the "flash-light" system to be described presently. At the same time it ought to be remembered that by far the greatest number of failures in indoor work are due to under-exposure, so that no effort should be spared to obtain instruments that will work rapidly when necessary.

It will be found, if not necessary, at least very advantageous, to have a shutter worked by a pneumatic arrangement to close and open the lens. This shutter may be on the outside of the lens, but it is certainly better placed inside the camera, just behind the lens. There should be a good length of tube for the pneumatic release arrangement, as the operator has sometimes to go some little distance from the camera—for instance to regulate the position or the lighting of the subject—and he should have the ball or "pear" of the release in his hand. The shutter called "The Cadett," or that known as the "Guerry," will be found to answer very well; and 10 feet of rubber tubing will not be too much.

To carry the camera the stand commonly used in a photographic studio is the best style; a tripod would be a great trouble in a ward or consulting room. A "studio stand" then is the thing, and it should have rubber tyres on its castors or wheels. Moreover, it should be of such a kind as to be variable in height from—say 3 to 5½ feet—for patients in bed or for showing deformities of the adult figure. Stands of this type have usually arrangements for canting the top and for giving other motions which will often be found useful; one further hint on this point will suffice—it is not economy to buy a flimsy stand.

A lens will be required for the focussing of the image on the ground glass of the camera. A "Ramsden," or an "Aplanat" of Zeiss, will cost but little, and is excellent for the purpose. A bit of good black velvet is unfortunately almost essential. A large cone of cardboard having its narrow end fixed on the lens-tube will be found very helpful towards getting clear plucky negatives when the flash-light is used for the exposure.

Probably the use of what is called a "flash-light" apparatus will be found by our reader the most novel, and (in imagination) the most puzzling part of our outfit. As a matter of experience it is quite a simple and pleasant system, and what is more important, it is probably the straightest road to thorough and regular success in ward and consulting-room photography. With a little practice the operator will come to have such an accurate judgment of the necessary exposure that failure in this respect will be the exception. There are many pyrotechnic compounds used for the production of the flash, but

probably none is better than pure pulverized magnesium ; it is safe in use, it does not give off an overpowering amount of smoke, and the smoke it does yield in combustion is not of an unpleasant kind. The principle of all flash-lamps is to blow or otherwise propel a certain quantity of the combustible powder through the flame of a spirit or other lamp. There are in the photographic world innumerable varieties of flash-lamp, but the simplest are found to be the best. The flash-lamp of Messrs. England and Son, of Charles Street, Notting Hill, is as good as any, and is used in several hospitals with complete success. A charge of magnesium is placed in a receptacle within an ordinary spirit lamp, and by means of a pneumatic device the magnesium is blown *up* through the flame, giving rise to an instantaneous and very bright and highly actinic flash of light. Lamps which project the powder *forward* are to be avoided, as they might lead to injury to the sitter. Some lamps are so made that they may be charged for several flashes by one operation of charging ; this is convenient if the lamps are otherwise good. This is the case with a lamp known as the "Hemperley," sold by the Eastman Co., of 115, Oxford Street.

One flash-lamp is as a rule not enough ; two or even three should be obtained, and they must be so arranged that both or all three are discharged by the one action of pressing a ball. The arrangement of the lamps for a sitter is a matter depending on circumstances, but as a rule one lamp should be on a higher level than the other. A flash-lamp must never be in such a position that its light can fall directly on the field of the lens ; the cone suggested above is useful in protecting the lens from the direct light of the lamp, which would certainly spoil the negative. The lamps may very well be in a line with the camera, to one side of it of course.

We do not propose to enter here into any details that can be found in any of the photographic instruction-books, but a few words of a general kind may be of service to the reader. As to the plates to be used, for instance ; they must be rapid or very "sensitive" to begin with. And in this kind of work it is often highly important that they should give as good a rendering as possible of colour. Photographs of skin-diseases are not of much value where the colours or the affected parts are diagnostically important ; and frequently surfaces denuded of skin, or suppurating or ulcerating surfaces are impossible to render accurately by photography. But at least we can make the best of such conditions by the use of plates specially prepared or treated for the purpose. By treating ordinary plates (gelatine-bromide emulsion) with certain dyes, photographers have endowed their plates with a

greater power of rendering yellows, and in certain cases even reds, accurately in the general scale of light and shade. These plates are called "orthochromatic," or—by one firm—"isochromatic." The isochromatic plates of Messrs. Edwards and Co. of Hackney, render yellow better than the ordinary plate of commerce, but they are no help in the rendering of reds. The "instantaneous isochromatics" of Edwards are extremely sensitive, and very well suited for our purpose; but they should be obtained direct from the makers, and used quite fresh. Their "medium" plates are not so rapid in action, but keep considerably better. With a flash-lamp and a lens working at f/8 or f/10, these "mediums" are quite rapid enough. If it is absolutely necessary to render the reds as well as possible, then we shall require to treat ordinary plates with an alkaline solution of cyanin, details of the process being given in many photographic books. Unless we have a very good dark room and a good drying-press this cyanin process is almost out of the question.

The dark room is a matter of some importance for comfort in working, but all that is necessary may be put into any ordinary room with but little expense. The chief thing is to have a sink and running water; for these conveniences make all the difference between comfort and discomfort in working. The sink need not be large, for our plates are not large, and it is better made of lead than of earthenware, as is so commonly the material. The tap should have a rose attachment which gives a stream of water highly suitable for washing plates. The washing operations may certainly be performed with a jug or ewer, but we would sacrifice a good many other conveniences to have running water and a sink. The illuminating lamp should be of ruby colour, not any kind of yellow such as is used by many photographers; yellow light would spoil our colour-corrected plates in a few seconds. The best kind of glass is flashed ruby on one side and stained yellow on the other, and is made by Chance for this purpose. One thickness of such glass will be enough if a lamp is used as the illuminant, but if we are using daylight we shall require in addition both a yellow glass and a red curtain. Two thicknesses of the Chance glass will probably suffice even for illumination by daylight, unless the daylight is very bright indeed; the sun should never be allowed to shine on the dark room window. Artificial light is certainly preferable to daylight, the former being more equable and more under control than the latter.

Of the developers which will be found given in photographic instruction-books the best for our purpose is probably the eikonogen developer. And the caustic alkalies being more powerful than the fixed, will probably be of more service to us. But it is to be noted that for

a beginner the eikonogen developer presents more difficulties than any of the others usually given; on the other hand it is, when properly handled, the best for minimal exposures. Next to this developer we recommend the ammoniacal pyrogallol, known to photographers as "pyro-ammonia." This is also a powerful developer, and it is more under control than the eikonogen-caustic. The following may be taken as a good standard developing solution :—Pyro., 2 grains; potass or ammonium bromide, 1 grain; liq. amm. fort., 3 minims.; water to 1 ounce. These reagents are conveniently kept in 10 per cent. solutions as "stock," and the developing solution made up as required, for the mixture does not keep at all well. The best preparation of pyro. is the "sulpho-pyrogallol" of the Platinotype Co., of Southampton Row, but almost all photographic chemists keep suitable solutions for stock ready made up. For the other solutions and operations of development the reader may consult photographic literature.

Before we leave this part of the subject it may be well for us to give a few more definite hints than we have already given with regard to the "lighting of the sitter." Cross-lighting should almost always be avoided; that is to say, the light must not come from both sides at once. This always leads to flat pictures, showing nothing properly in relief. The light must not be behind the sitter, nor yet too straight in front of him. The latter fault leads to flatness of picture, and renders it impossible to show any contrast. If the light is directed too much from the side of the object, one side of the sitter will be lost in shadow. Perhaps the most useful angle for general work is about 45 degs., that is to say, that the light may fall on the sitter at that angle, and as above one light may be placed higher than the other if two are used. In some cases where both sides of a face or body are to be shown one light may be at one side and the other at the other side, but the angles on each side should not be equal, nor the heights equal; but there are exceptions to this, as to other, rules.

Two "backgrounds" should be procured, one light in colour, the other dark. For the light background an ordinary blanket does very well; for the dark one the screen usually found in wards of hospitals answers capitally. Of course we put a dark background behind a white object as a face or body of normal colour; but if we are dealing with, say, a skin disease of a red or yellow colour, then we use a light-coloured background.

The sure and quick way to ultimate success is to make experiments with equal quantities of magnesium powder at the same distance; to develop with solutions of precisely the same strength; and to persevere till a good negative is obtained. Then good negatives ought to

be always got under the same conditions, and in most cases there is no need to change the conditions. This is the chief reason why we recommend flash-light for this work. If daylight be used the worker will require to be a good photographer before he can expect to have a fair run of success, and moreover, the sitters will often be found incapable of remaining steady for the necessary time.

PHOTO-MICROGRAPHY.

This part of our subject is perhaps more easily explained to those who are not photographers; but we do not promise such speedy success as we do in the other line of work already treated. Still, there is no reason why medical men who have even a little time at their disposal should not make very useful photo-micrographs, provided they do not try too much. To be more definite, we mean that unless a large amount of time, a considerable knowledge of photographic technique, and good instruments are available, it is better to confine attention to work at low or medium powers, and to leave to those who devote all their time to it, work at the highest magnifications. But in the province of low and medium powers there is a large field for useful and interesting practical work. To show the general arrangement of parts in—for instance—a tumour; to show the degeneration of an organ fatty, waxy, amyloid, etc., is quite within the power of anyone with a little leisure; and with some practice even the more minute histology of healthy and diseased tissues may very well be represented by that most accurate of all graphic methods—photography.

The necessary tools are, of course, a microscope and a camera. With these articles we may produce very fair work, even if it lies with our own ingenuity to fit the two instruments to each other. We have known very good work done in this way, including high-power representations of *sarcinæ ventriculi*. But nowadays so much attention is turned to this science that suitable apparatus can be obtained at any optician's, so cheap and so practical, that in all probability it will be real economy to procure at the outset one of these apparatus, however unpretending. The microscope is almost always used in the horizontal position, and a camera with a good stretch is so fitted as to have its axis exactly corresponding with the optical axis of the microscope. The camera is of the simplest kind, consisting of a long box with bellows to allow of a good stretch. Those who have a suitable microscope—and any one that will go to the horizontal position will do—ought to get a camera fitted with a stretch of not less than 3 feet for a couple of sovereigns or less. The size of the plate to be used may

be half-plate, and the dark slides should have a "carrier" for taking quarter-plates. In fact the full size of the plate need not be more than quarter-plate; we do not use any larger plate perhaps oftener than once a year.

It is a great convenience to have the microscope and the lamp on a table, which can be turned out from the axial line to allow of the image being examined in the usual way down the tube; after this examination the microscope is turned back to its normal position ready for the exposure to be made. We shall waste no time or space in describing what may be seen and got at any optician's shop; the chief point to be observed in purchasing is to make sure that the parts are well fitted together and accurately centred, and that the whole is of sufficient strength, so that it will not be unsteady in use. Baker, Beck, Swift, Watson, and many others make apparatus well suited for the purpose. The instrument used now by the writer was made by Baker, but it is of construction far more complicated and expensive than is needed for low power work. Mr. Baker makes a simple and cheap apparatus for ordinary work, and this will be found to answer every purpose. Mr. Swift's simple arrangement is also good.

We presume that few of our readers will care to take up the lime-light or the electric light for this work; and, indeed, there is no need for any such trouble and expense as these entail. A good oil lamp with a large wick—say one inch wide—will answer all purposes; but with such a lamp the exposure may at times last for minutes, and so the apparatus and the table supporting it must be at least fairly rigid, for the slightest tremor will vitiate the results. A room as far as possible from street traffic should be chosen for the microscopical part of the business; but if the room is unsteady the entire apparatus may be supported on several layers of thick carpet, or on cubes of india rubber; then if any part shakes the whole will shake in unison or nearly so.

The best lenses are the apochromatics of Zeiss, but these are very costly, and first-rate work may be done with good English lenses or good foreign ones much cheaper than those of Zeiss. But the lenses must in all cases be corrected for photography; their visual and chemical foci must be coincident. Such glasses are sold by all opticians, but it is well to explain in purchasing that the lenses are required for this purpose. A condenser should also be obtained, of angle not less than the angle of the highest power-glass we propose to use; the condenser should be achromatic if the purse will stand the expense. It is not absolutely necessary to use an ocular for projection, but the use of such an ocular greatly simplifies matters; as a rule the

ordinary eye-piece used with a microscope does not answer for projecting the image for photography. A proper "projection ocular" does not cost much, and usually does well even with lenses not intended to be used with such an eye-piece. For the work we have in mind in writing these words, the following battery of objectives will be enough: A 3-inch; a 1½-inch; a 1-inch; a ½-inch; and a ¼ or ⅛th inch. A "bulls-eye" should be got, and the achromatic condenser should have an iris diaphragm.

It is most important that no part of the inside of the apparatus should be shiny; the inside of the microscope and of the camera must be dead black; bright spots lead surely to fog and flares on the negatives.

As we have to adjust the focus on the ground glass of the camera, which is at some distance from the focussing-screw of the microscope, it is necessary to have some device for effecting this focussing from a distance. The instruments alluded to as sold by opticians are all fitted with such a device consisting of either a rigid rod or a pulley, so that no more need be said on this matter; but sometimes the opticians omit to supply a plain sheet of glass for focussing upon. This glass should have a few lines ruled on its front face—next to the microscope—for this forms a much better surface to perform the final critical focussing upon, than does the ground glass. With the plain glass we have to use a focussing eye-piece, such as a "Ramsden" or an "aplanat" of Zeiss.

The plates for use should certainly be "colour-correct," for with stained objects we shall have some puzzling colours to encounter. The medium "isochromatics" of Edwards answer well; or if the expense is objected to, some good plate intended for landscape, such as Thomas' "thickly coated." For stains such as carmine and picro-carmine the ordinary plates often are better than the much more expensive "iso" plates, but where we have faded or poor stains the colour-correct plates are a great help. Two or three pieces of yellow glass—say, three inches square—should be obtained to act as "screens," when the colour-correct plates require to be helped in their colour-representation *rôle*. Opticians generally know what kind of glass is needed, but to save expense we say that there is no need for these glasses being "optically worked." A simple stand will be required to hold these glasses between the light and the condenser.

The steps to be taken in "setting up" the object for photography may be described thus: Having lighted the lamp, set it down with the edge of the flame towards the microscope; the distance between lamp and microscope is of little consequence. Shut the iris of the condenser

to as small an aperture as it will go, and with a low-power objective, say the 1-inch, in its place, get an image of the iris on the field ; with the centreing-screws of the sub-stage get this circular spot of light into the centre of the field. Now open the iris and by trial get the image of the lamp-flame into the centre of the field ; this is to be done by moving the lamp, not the condenser. The flame is to be depicted as a streak of light right up the centre of the field. Now put on the stage some object and focus it with the objective ; and having done this, focus the condenser up or down until the flame-image is also seen sharp on the object. The object is now in the conjugate foci of objective and condenser, but the photograph of such an image would be very unsightly, and we now interpose the bulls-eye to spread the light evenly over the field. The bulls-eye is to be placed so that the edge of the flame is in the focal point of the bulls-eye for parallel rays ; usually this point is 2½ to 3 inches from the flat side of the bulls-eye, which side is to be next the lamp. It is easy to see when the bulls-eye is not properly placed, for in such a case there is uneven lighting on some part or other of the image in the microscope. The writer has dealt carefully with the use of the bulls-eye in " Practical Photomicrography "*, but a little practice and experiment ought to teach the use of this part of our apparatus.

The bulls-eye may be used instead of a condenser, if an angle of not more than about 25 degs. is required. This is to say that for powers up to an ordinary 1-inch glass the condenser may be dispensed with ; but the result is not quite so good as if a condenser is used. In any case the condenser must in angle bear some relation to the objective used ; a high-angled condenser will not work well with—say—a 1-inch glass. Condensers are usually made so that for the lower powers they may be used if the front element of the condenser is removed, and with powers such as 1-inch and even ½-inch this is often the proper way to proceed. A good condenser of angle about 140 degs., which would be suitable for the highest power coming under these remarks, will answer well for work with a 1-inch glass, if the front hemisphere of the condenser is removed. For work with the 1½-inch the bulls-eye alone is sufficient, while for the lower powers a parallel beam may be thrown from the bulls-eye, and will be found effective. In all cases it is necessary to arrange the lighting by experiment, and when using the very lowest powers it is well to turn the flame " broad-side on " to the object.

The image being arranged in the microscope, the table carrying the latter and the light is turned to the normal position for photo-

* New York : Scovill Company.

graphy, and the image is first examined on the ground glass of the camera, care being taken that it is central on the ground glass. Usually there is in the camera, near the plate, a sheet of metal having in it a circular aperture of about 3 inches diameter; this helps to prevent stray light from reaching the plate. Next, the image is critically focussed on the plain glass by means of the Ramsden or Aplanat ocular, and all is ready for the exposure.

It is impossible to give even an idea of what exposure will be required for any subject or any magnification. Other things being equal the exposure depends on the magnification; but the colour of the object, the sensitiveness of the plate, the strength and nature of the light, make all the difference in the calculation of the exposure. Trial and practice alone will teach this most important matter. The exposure depends greatly on the amount of light allowed to pass through the condenser, and if too much light passes—too much angle is used—the lens will be "drowned," and the negative will look foggy no matter how short has been the exposure. But the more angle we can use without this drowning, the better; it is well, however, for the beginner not to use too much angle. If we remove the ocular and look down the tube at the back of the objective, we shall see how much of the objective we are utilizing; and as a rule we should not use more than two-thirds of the objective's whole angle.

It is also to be noted that the yellow screens used, as will be presently suggested, cut off more or less of the image-producing light; we may calculate roughly that each such glass entails increase of exposure by three times. For a trial let the beginner expose on a hæmatoxylin-stained preparation with the one-inch objective and no ocular for half a minute; and let him remember that if this is correct for the one-inch, the half-inch will require one minute, and so on.

As before we shall waste little time on matter that can be found in any book of photographic instruction, but we may say that as a rule for this work we prefer the Hydroquinone developer to others. The pyro. developer already formulated acts well, no doubt; but the hydroquinone has the merit of yielding good contrasts rather more easily than the pyro. And we recommend as useful and convenient the solutions made up by Messrs. Thomas and Co., 10, Pall Mall; there are two solutions to be mixed in equal measures, and we dilute this mixture with an equal measure of water. With this developer the plate should develop in about 4 or 5 minutes, and should yield such a negative as an experienced photographer to whom the negative should be shown will call a "good plucky negative." It is impossible to describe on paper a good negative. We advise the reader to consult any photo-

grapher as to the quality of some negatives, and to aim at getting such as will be described as above. In particular, if we propose to use our negatives for illustrations by any mechanical printing process, it is necessary to have brilliant—almost hard—negatives.

The photographic printing processes which lend themselves above all others to our requirements are the "bromide paper" and the "gelatine chloride" processes. Of the two we prefer the former, but the latter is easier for the tyro. The gelatine-chloride process is often called "Aristotype," and excellent paper may be got from Mr. Gotz of 19, Southampton Street, Strand. We always use the bromide paper of the Eastman Co. 115, Oxford Street.

We cannot now do more than give hints how to treat certain stains which are most frequently used in ordinary medical microscopical technique, and we would impress on the reader that nothing but earnest practice will ever make him even moderately sure of getting the desired result. The following suggestions will only prevent him from wandering hopelessly astray in his early attempts.

Good logwood stains may be treated with ordinary plates; poor faded logwood will require colour-correct plates, and in severe cases a yellow screen also. Carmine and picro-carmine ought to come out well with ordinary plates and full exposure; but if the staining is very dense a yellow-sensitive plate without a screen will be the thing to try. Fuchsin ought to do with a plain plate, but if pale, will need a screen with an ordinary or colour-correct plate. Eosin is a very puzzling stain to deal with; it looks red or pink, but seems to photograph as a poor blue. We treat good eosin-stains with yellow screen, poor faded ones with a yellow, and also a blue, screen and a corrected plate. Sometimes we have to deal with preparations stained with "blazing" red, as bone stained with rubin; the only way to get out of this extreme difficulty is either to give a very long exposure without a screen, or to prepare plates with cyanin which is a very awkward operation.

When we have multiple stains we must trust to our appreciation of the relative photographic values of the colours, and our knowledge of the principles ruling photographic action. But we shall mention some of the commoner multiple stains. Logwood-and-eosin is a very puzzling combination. We must use colour-correct plates, and probably a yellow screen to keep back the eosin till the blue has time to impress itself. Hæmatoxylin-rubin-and-orange, when really perfectly used, require—strange as it may seem—no special treatment; but if the rubin or the orange is too strong, then we must cut off some of the blue by a yellow screen.

PLATE VII.

A.—HUMAN SCALP.—TRANSVERSE SECTION OF HAIRS. × 60.

B.—MESENTRY.—VESSELS BLOCKED BY B. ANTHRACIS. × 350.
PREPARATION BY M. PASTEUR.

For bacteriological work which hardly comes under our heading, fuchsin needs no special treatment, nor does good plucky gentian violet ; but both of these when poor or faded need a screen. Fuchsin-and-methyl-blue always require a screen, but an ordinary plate answers as well as a colour-correct one in most cases, often better. Gentian violet and its usual contrast, vesuvin, do very well with almost any plate, but methyl-violet almost always requires a corrected plate and a yellow screen to boot.

The colour-correct plates are relatively more sensitive to yellows than are the ordinary plates ; but we use a yellow screen to eke out this quality by cutting off some of the blue.

Our paper has run to a much greater length than we intended, but we have preferred to enter at some length into the matters that we have broached, rather than to give suggestions so brief as to be useless if not misleading.

The accompanying figures, *Plate VII*, show with what precision we can reproduce even microscopic objects by photographic methods. The specimen *A* represents a portion of the scalp showing the hairs in transverse section, while *B* is a specimen prepared by M. Pasteur, showing the mesentery, the blood-vessels of which are blocked by B. anthracis.

Sanitary Science, 1891.

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The good work which has been, and is still being, done by the Sanitary Institute of London in raising the educational status of inspectors claims attention, and in this direction the Staffordshire and Derbyshire County Councils also deserve praise. It is noteworthy that the Sanitary Inspectors' Association (founded 1883) was incorporated on April 4th, 1891. The education of future inspectors is as important as the education of future medical officers of health, but whilst the latter may safely be left to the General Medical Council and the teachers at the various public health laboratories which have lately sprung, and are still springing, into being, a word or two must be said as to sanitary inspectors. An inspector ought to have an elementary knowledge of the physical and chemical laws ; of plan drawing ; with a good technical knowledge, coupled with apprenticeship, if possible, of the building and plumbing trades. In fact, when it is remembered how much our health depends upon the plumbers, it is gratifying to know that their registration is a movement widespread in Great Britain and Ireland. A draft bill has already been prepared, and will no doubt be presented to Parliament during 1892. The object of this registration movement is the education of plumbers, with the granting of degrees or certificates to qualified workmen ; and in this way it is hoped to raise materially the standard of plumbing sanitary work, so that in after years plumbers will not be sanitary plumbers in name only, but in reality. The importance of this movement, sanitarily considered, cannot be over-estimated, when we consider the numbers of deaths directly and indirectly due to the "botchings" of the plumbing trade. Builders and architects, too, would do well to follow in the tracks of their fellow craftsmen. For instance, the importance of drain pipes being laid carefully (we may say scientifically), must be apparent to all, and hence the necessity of skilled workmen and the careful and competent supervision by the officers or inspectors of a sanitary authority of all drains, house or otherwise. In fact, our future inspectors will be men

of no mean order, if the ideal sketched above be realized. Improved status of inspectors means, necessarily, improved qualifications and attainments. A sanitary science certificate is practically a necessity, and should be possessed by all future aspirants to the appointments of inspectors. It must not, however, be forgotten that as the status of the inspector is raised, so is that of the medical officer of health. Inspectors and medical officers of health must work harmoniously (though the Scottish counties apparently think otherwise), and medical officers of health, as heads of sanitary departments, must have complete cognizance and supervision of the workings of their staffs. *Esprit de corps* is much to be encouraged in a sanitary staff, and with a medical officer of health, supported by his authority and entering fully into the difficulties of his officers, we may look forward to good and lasting sanitary work being accomplished. In fact, inspectors and medical officers must fight shoulder to shoulder, and all must remember that once the square is broken there must be a general stampede.

The time has come when inspectors' appointments (like those of medical officers of health) ought to be permanent, *i.e.*, under the Local Government Board, so that duties may be carried out conscientiously and fearlessly. The absurdity of the idea of sanitary inspectors coming up *yearly* for re-election and yet being expected honestly to do their duties must be apparent to all on reflection. The scale of remuneration, too, must rise with the status (educational and otherwise) of inspectors.

The testing of drains being an important duty of an inspector, we may be allowed to dwell for a moment upon the different practical methods employed, so as to enable us to explain one or two important improvements which have come to the front during the last year. It may be laid down as an axiom that the hydraulic, or water test is the only trustworthy one—so trustworthy, indeed, that some builders think it proves all drains to be wanting! It certainly is a severe test, and quickly finds out shortcomings in all but the very strongest joints. The method of its employment is so well known that we need not trouble to describe it. We may also pass over the various smell tests (*e.g.*, peppermint, cloves, assafœtida, sulphur, etc.) as being at times misleading, and proceed to the consideration of the smoke test, which is applied in various ways, *e.g.*, the smoke rocket, or one of the many patented smoke machines.* One great objection to the rocket is its

* *E.g.*, "Grahtryx" of Messrs. Baird, Thompson & Co., 165, Queen Victoria Street, London; "Smoke Generator" of Messrs. Burn & Baillie, London and Edinburgh; "Smoke Drain-tester" (Fyfe & Dobson's patent) of Messrs. Phillips & Co., Glasgow, etc., etc.

straight, unyielding case, which renders it useless for traps, gullies, etc., and makes it only possible to be used after opening up the drains. This objection has been remedied by an ingenious little rocket recently patented by Messrs. Groom and Burnet. The sub-joined diagrams (*Figs.* 36—39) will explain themselves. The case is of tin, and is covered with brown paper and plaster of Paris.

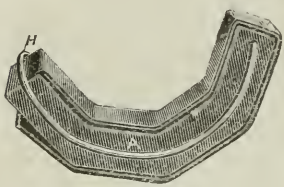


Fig. 36.
Tester for carrying.

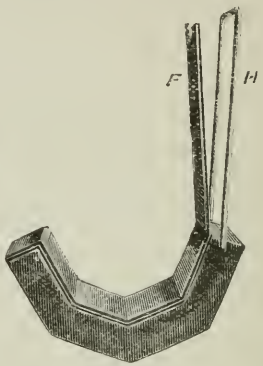


Fig. 37.
Tester for use.

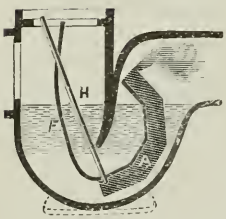


Fig. 38.
Tester in use in gully.

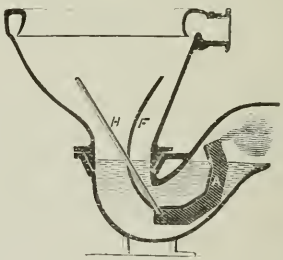


Fig. 39.
Tester in use in w.c.

By means of the handle H, the tin case A can be passed through any form of w.c., or other trap or gully. The tin case is filled with a pyrotechnic composition, which, when fired (by means of the fuse F), gives rise to a quantity of smoke. It will thus be seen that we have a very ready and efficient method of testing existing drains through any w.c., or surface trap, without either removing the water from the trap or opening any portion of the drain.

A little ingenious toy, or waistcoat pocket drain tester (*Fig.* 40) has also been brought out during 1891 by Mr. Kemp, of Brixton, London.

The principle of its action is as follows:—A piece of string being attached to the loop, the tester is passed down any W.C., trap, or gully with an ordinary flushing of water (hot water preferred). The water wets the paper band and lets free the spring. A smoke, and smell-producing chemical in the little glass bottle is liberated, and ignites on contact with water, causing a great deal of smell and some smoke. These testers, though small, are remarkably effective, and by their means any householder may become his own sanitary inspector.

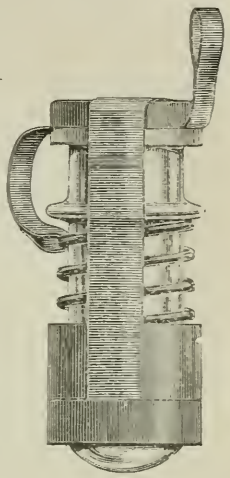


Fig 40.

Smoke rockets have another great drawback, *i.e.*, the shortness of the time they last (five to ten minutes), in consequence of which the volume of smoke given off is not sufficient to show minute flaws in pipes or joints, there being a want of sufficient pressure of smoke in the pipes. Hence some form of smoke machine is better, enabling a continuous supply of smoke to be driven into the drain. Smoke appeals to the smell and sight, and is useful as a general test for ordinary flaws in drainage, but too much reliance must not be placed upon it.

Sanitary authorities will before long be expected to give certificates as to the efficiency of the drains of new buildings. The hydraulic, or water, test will then become a necessity, and will ensure our joints and pipes being sound. Clay joints in this way become things of the past. Our drains being thus watertight, the necessity for their efficient ventilation becomes apparent; also the importance of disconnecting all sinks, rainwater pipes, etc., and, further, the disconnecting of the drainages of our buildings from the main sewers. Hitherto our house drains have, practically, ventilated our main sewers, *i.e.*, sewer gas has been "laid on" to all our houses and buildings. Granting the necessity for disconnecting drains from sewers, the importance of ventilating these latter must then be admitted.

Sewer ventilation engrosses the attention of the County Council as it has done that of their predecessors, the Board of Works. What more utopian than a house disconnected (with interceptor and chamber) from the main sewer, and with drains so well laid and so thoroughly ventilated as to render the presence of a trace of sewer gas impossible? An intercepter or chamber, *per se*, must not be considered the essential of all new drainage plans and systems. One

point we may impress upon our readers, and that is, that where the new system of intercepter and chamber is used all other details of sanitary works must be carried out with equal exactness and precision. Thus, each pipe must be laid scientifically, with proper fall, and must be embedded in, and covered over with, concrete to the extent of six inches at least. Some builders of the present day, however, seem to think that by simply building a chamber or manhole they are carrying out the most advanced sanitary ideas of to-day, and that the other details of sanitary work are unimportant, and may consequently be neglected. It is very easy to conceal a bad joint.

Whilst on the subject of drainage, attention must be called to the method of national main drainage expounded by Dr. B. W. Richardson on May 2nd, 1891, in a paper read before the Association of Public Sanitary Inspectors of Great Britain. Looking at a map showing the wonderful network of railways, it struck Dr. Richardson that it would be easy to construct a series of tunnels (either in iron, earthenware, or brick) along the sides of all our lines of railways. The sewage is to be exhausted, or sucked out, from the towns, and then carried along these various mains to different parts of the country, the land of which it is to fertilize. In this way the sewage of towns would be carried to every part of the country. The storm water is to be kept separate. All drains and sewers are to be of uniform size and capacity, and laid on a uniform plan. London would be drained from (say) 120 points, and the sewage would pass out in various directions along the well-known lines of railways. Dr. Richardson described the system as simple, practicable, and useful, and compared it with the circulation of the blood. The earth is the lungs ; the sewage, the venous blood ; food, the arterial blood. If Dr. Richardson's dream is realized, we have the question of the pollution of our rivers, and so of our water supply solved. The practical working out of the scheme is left to others !

As to the treatment of sewage, we may draw attention to the polarite and ferozone process of the International Water and Sewage Purification Company* as having again come to the fore during the last year. It is the method lately adopted at Balmoral, the Queen's Scottish palace. One acre of polarite is said to be equal to about six hundred and sixty-six acres of land in irrigation power. The principle is to add ferozone (*i.e.*, a black magnetic preparation of salts of iron, alumina, magnesia, and magnetic oxide of iron) to the sewage as a precipitant, and then to allow the treated sewage to settle into sludge and supernatant fluid, which is then passed on to

* The Headquarters are 7, Victoria Street, London

filter beds of sand and polarite. Polarite is a hard, black, porous magnetic oxide of iron, and is sometimes called magnetic spongy carbon. It is insoluble in water, and practically everlasting. The results of this method of sewage purification, as shown at Acton, Hendon, and elsewhere, are most encouraging. Polarite is, of course, used as a filter for purifying drinking-water also.

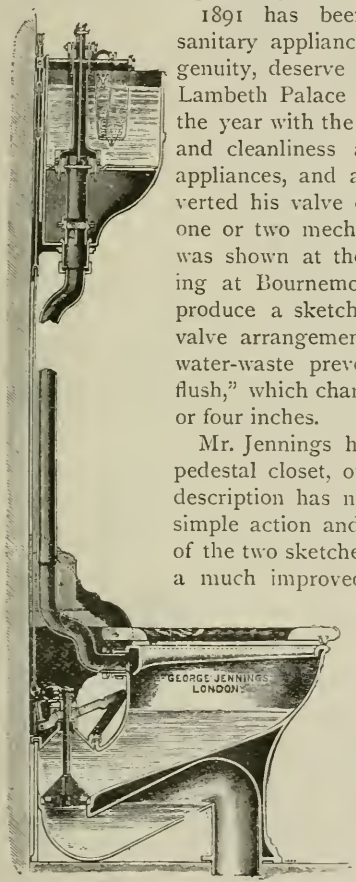


Fig. 41.

1891 has been somewhat prolific in patented sanitary appliances, a few of which, from their ingenuity, deserve mention. Mr. George Jennings, of Lambeth Palace Road, London, has left his mark on the year with the "1891 W.C." (*Fig.* 41). Simplicity and cleanliness are the keynotes of all sanitary appliances, and accordingly Mr. Jennings has converted his valve closet into the pedestal form, with one or two mechanical improvements. This closet was shown at the British Medical Association Meeting at Bournemouth, and much approved of. We produce a sketch which is self-explanatory. The valve arrangements are simplified, and work with a water-waste preventer from above, with an "after-flush," which charges the basin to the depth of three or four inches.

Mr. Jennings has also introduced another form of pedestal closet, on the syphon principle, and, as a description has not yet appeared, we will explain its simple action and ingenious arrangement by means of the two sketches, *Figs.* 42 and 43. It is practically a much improved Dececo. There are two water seals, and the depth of the water in the basin is six inches. The water from the water-waste-preventer, rushing into the long arm A of the syphon, starts its action, though the closet is arranged to prevent the syphonic action being started by the emptying into the basin of slops, etc. This is accomplished by means of an indiarubber butterfly valve, C, opening inwards at the top of the syphon on the supply pipe. When the supply pipe runs full the valve is closed and the syphon acts. If, however, a pail of water is thrown

into the basin, the syphonic action may be started, but stops at once when the air is drawn through the valve, which opens inwards when the pipe is not running full. This is a very important improvement, as the syphonage tendency (when not wanted) is the great drawback to all closets on this principle. The chief advantages of this syphon pedestal may be tabulated thus : (1,) No valve arrangements required ; (2,) Six inch depth of water in basin ; (3,) The butterfly valve (C) with its anti-syphonage action ; (4,) Arrangement of an air-pipe (D) in connection with air-space between spigot-end of closet and lead trap for the escape of residual air from smaller arm of syphon. A water-waste-preventer with "after-flush" is also fitted to this syphon closet.

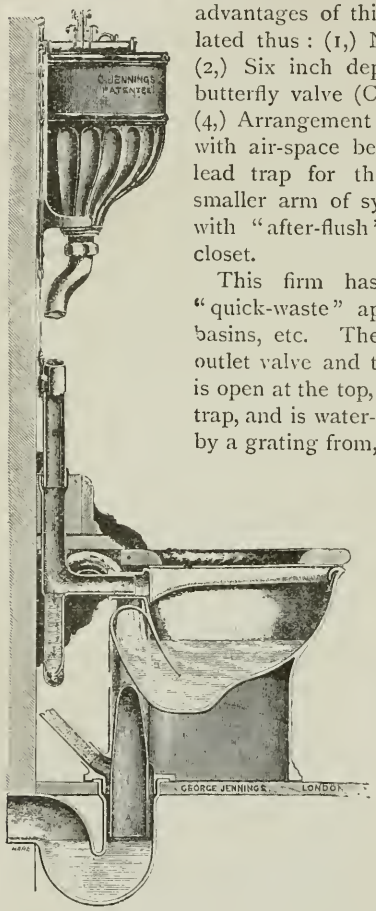


Fig. 42.

This firm has also patented an improved "quick-waste" apparatus for baths, sinks, wash-basins, etc. There is no air space between the outlet valve and the trap ; while the overflow pipe is open at the top, but passes directly down into the trap, and is water-sealed. In front of, and separated by a grating from, the entrance to the overflow-pipe

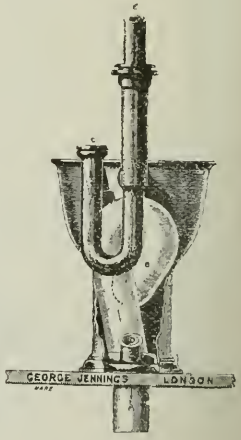


Fig. 43.

is a concave tray for soap, sponge, etc. The solid waste plug is metallic, non-removable, and works with a single half-turn of the knob above,

effectually preventing the return of suds, etc. The bath is fitted with four pedestal feet, and the trap is thus above the floor.

Tip-up basins for lavatories are useful, but they are by no means perfect, because they are apt to become offensive from the splashings of the soapy water. Careless people, too, are apt to break them by tipping them up too high, and the handle by which they are lifted up is hollowed, and becomes foul from the difficulty experienced in cleansing it. The overflow runs away in the front of the basin, through a concealed passage—so concealed that it is rarely, if ever, cleaned. All these difficulties have been overcome this year by Messrs. Tylor & Sons, 2, Newgate St., London, who have recently patented their "Weir" (tip-up) lavatory, the annexed diagram of which (*Fig.* 44) will readily be understood. The waste water being discharged over a weir goes direct, with few splashings, into the waste-pipe, the grating of which is so arranged (by means of narrow projections extending downwards and outwards and the grating fitting loosely into the receiver) as to afford its thorough flushing and cleansing. The overflow water flows also over the "weir," directly into the waste pipe. The basin, again, need not be lifted so high owing to the "weir," whilst the presence of an indiarubber buffer underneath the basin prevents breakage from careless use. The basin is made to lift out, and the handle is solid—both important improvements in the way of cleanliness.

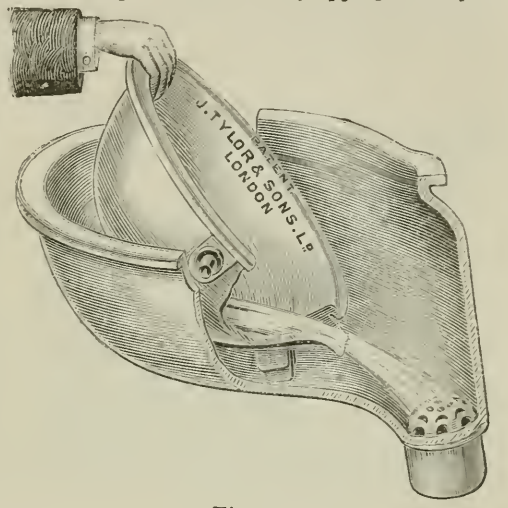


Fig. 44.

To be in the fashion, Messrs. Tylor & Sons have also brought out a pedestal water-closet, in the form of their column pedestal *valve* closet, which is simply the valve principle applied to their well known column pedestal closet. They have also improved their column pedestal closet by fixing the basin and the trap upon an iron support

standing about five inches high, thus enabling a brush to be passed beneath the closet for sweeping purposes. This principle is not, however, applicable to the column pedestal *valve* closet. Messrs. Tylor & Sons fit a drawn lead trap on to the earthenware basin in a very simple and effective manner. They sweat a brass collar into the lead trap, and the spigot end of the basin fits into this brass collar or socket, and is jointed with red lead. The water, moreover, standing in the basin at a higher level than the joint tests it, and so a ready means is given of proving the plumber's work before he leaves the house.

Messrs. Tylor & Sons being brass founders, mention must be made of their "quarter-turn tap," which, by means of two threads (one working against the other), gives a very ingenious screw-down tap, easily repaired, and proof against any concussion in the pipe opening it.

Mr. Thomas Twyford, of Hanley, continues to improve his "Deluge" wash-down water-closet in the following particulars :—(1,) Improved formation of basin and trap ; (2,) Patent flushing arrangement, which ensures complete washing of basin and thorough clearing of all contents through trap ; (3,) Large surface of water for soil to drop into and be deodorized ; and (4,) Deep water seal of trap (the depth of water being fully two inches).

Mr. Twyford has also introduced some improved fire-clay* goods (lavatories, urinals, etc.). They are subjected to a very considerable heat and enamelled, so that in addition to being strong and unequalled for school or other rough usages, they are also sanitary, and easily cleansed.

Messrs. Doulton & Co., Lambeth, London, have brought out their patent "Paisley" water-waste-preventer (*Fig.* 45) during 1891. The arrangement is very simple. The outlet pipe is branched at the top, one branch turning downwards towards the bottom of the cistern and forming the short arm of the syphon, the other being connected with the top of a cylinder in the cistern. A piston or plunger works loosely within the cylinder, and when at rest is covered with a column of water. When the piston is raised the column of water above is driven into the outlet pipe, *i.e.*, the long arm of the syphon, and so sucks the water up the short arm, thus starting the syphonic action. The cylinder and syphon are cast in

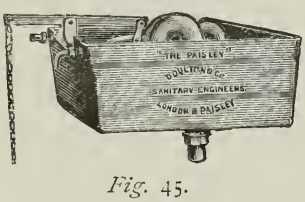


Fig. 45.

* "Cliffe Vale" Fire Clay.

one piece, and a great advantage of the "Paisley" patent is from the syphon being separated in its action from the piston and cylinder. It is, moreover, easily started, quiet in working, certain in action, and has an unbroken flush of water.

This "Paisley" cistern is now used with their pedestal "Simplicitas" wash-down closet (*Fig.* 46), with the closet and trap in one piece. This is a very useful form of closet, possessing the following advantages:—(1,) Cheapness, durability, strength; (2,) Large water area — five-and-a-half inches diameter, with one-and-a-half inches water seal; (3,) The force of the flush is brought to bear *directly* upon the trap, and is not expended on the basin. The "Simplicitas" is made in three kinds of ware, *e.g.*, stone, Queen's, and glazed.

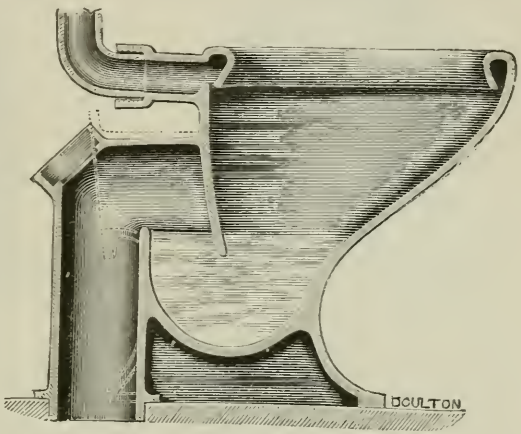


Fig. 46.

Messrs. Doulton's flushing-rim lavatory* deserves notice, as it is an improvement. It is made with a standing waste, which takes out, and so is easily cleansed. The waste is also the overflow. The flushing rim extends round the standing waste, which is, accordingly, cleansed whenever water (hot or cold) is drawn. By means of the flushing-rim, soapsuds are not now found sticking to the sides of the basin nor round the outlet.

Messrs. Doulton and Co. are now making the waste, the trap, and the tubular stem containing the overflow of their baths all in one piece. The overflow goes *direct* into the trap, so that the overflow and waste are always trapped and water-sealed.

Doulton's improved stoneware urinals are being placed at Charing Cross, London, and are said to be far in advance of any style of urinal yet brought before the public. An elevation and section as shown

* Messrs. Tylor & Sons have also a patent "flushing-rim" lavatory.

(*Figs.* 47, 48) are easily understood. The urinal can be fixed as hexagon (see diagram), in straight ranges, or as single angle. It is very simple in arrangement, and can be readily cleansed and flushed. The backs are circular, and made in strong salt-glazed stoneware, which is proof against the effects of urine. The iron grating (surrounding the urinal)

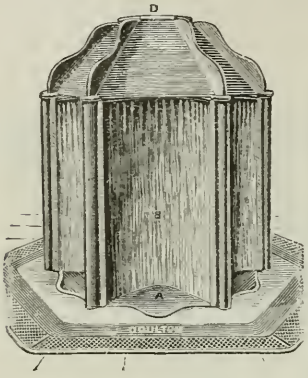


Fig. 47.

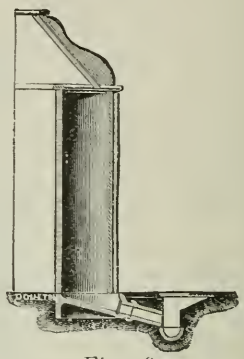


Fig. 48.

provides a free passage for the atmosphere, and is sufficiently removed from the user to prevent its being soiled by urine. This grating is made to take up, and so affords a ready means of inspection. The upper channel is to catch dirt or mud and prevent it from clogging the drains, the liquid passing away in the dwarf division.

Messrs. Doulton & Co. have also patented a new improved syphon automatic flushing apparatus, which is simple, effective, and somewhat novel.

Messrs. Dent & Hellyer, of 21, Newcastle Street, Strand, London, have improved their patent bracket hygienic W.C. in several ways. Especially noteworthy are the hydraulic improvements in the flushing rims and the mechanical improvements in the inlet arms. They have also brought out what is known as the McHardy* slop sink—an ingenious contrivance for washing bed-pans (male and female) without any danger of the infected matter coming in contact with the nurses' hands. The slop-sink is arranged above with a flushing rim, whilst from below there is a rosette douche directing sprays of water. In addition, there is a side inlet, from which water is projected into the inside of the male pan. This appliance was shown at the Sanitary

* Mr. McHardy, F.R.C.S., is Professor of Ophthalmology at King's College, London.

Institute during the meeting of the International Hygienic Congress, and was much approved of.

Messrs. Dent & Hellyer also showed a simple form of hospital W.C. with a sloping top, so arranged as to prevent out-patients from standing upon the seats.

Their patent flush-out grease-trap belongs to 1891 and deserves notice. It is made in strong stoneware, and is provided with a flushing rim. The inlet arm is divided into two divisions—one passing down the back of the grease-trap and flushing out the bottom (*e.g.*, sand, etc.); the other supplying the flushing rim, together with a powerful jet that plays on to the top of the congealed grease, breaking it up and assisting in driving it through the outlet. The inlet arm is connected with an automatic flush tank (*e.g.*, twenty gallons) regulated to discharge its contents at regular intervals. This grease-trap is so arranged as to be fastened in any position on to a cook's, or scullery, sink.

Messrs. Reid & Co., 69, St. Mary Axe, London, have improved during this last year their flush-down pedestal W.C.—"The Aldgate." It is specially constructed to work with a syphon cistern, and the flushing rim is improved so that the water thoroughly cleanses the basin at each flush. The back of the basin is so formed that the soil drops *directly* into the trap water, which, being reduced to a minimum, enables the body of water to be changed each time the cistern is used. Its good points are compactness, neatness, and economy.

To prevent the kinking of pipes at their joints, *e.g.*, from the dropping of the spigot in the socket at the invert, and to do away with the necessity for gaskin, or other means being used for keeping the pipes in position until cemented, The Patent Paragon Pipe Company of 18, New Bridge Street, Blackfriars, London, have lately brought out some sound gas and water-tight joints (*Fig.* 49). The sockets of the pipes are made eccentric (instead of concentric as hitherto), and the depth of the shoulder in the socket at the invert is equal to the thickness of the pipe, so that when the spigot is inserted and abuts at the shoulder, it rests on the socket, and has a solid bearing thereon,

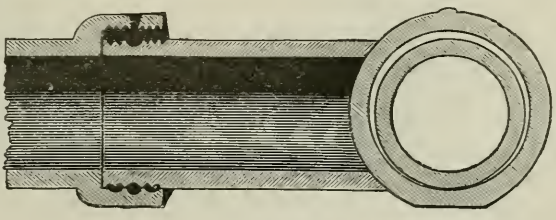


Fig. 49.

and cannot drop ; thereby forming and maintaining a true invert at the joints, even though the pipes should, through any cause, be disturbed. There are three grades of pipes made A, B, C, depending practically on the different depths of the sockets. The sockets are thickened at the lower part and grooved for the cement or other packing material. They are also made flat at the base, so as to give the pipes a firm bearing on the bed. The sockets are made with or without grouting holes. The quality of the stone-ware used by this Company for their pipes is high-class.

The subject of drain pipe joints (especially when under houses) is a very important one sanitarily, and yearly we have patents brought out, the object being to secure a gas, and water-tight joint. In addition to the patent paragon pipes described above, there have been one or two other patents taken out this last year. Thus Mr. Chas. Thompson of 28, Market Street, Rugeley, secures a good joint by making a larger socket (with greater diameter), and, after fitting in the spigot end of pipe, inserting a loose internal annular collar ; whilst the remainder of space left between the socket and the spigot is filled with cement.

Mr. Wm. Deeming, of Summit, Littleborough, Lancaster, has also patented an improvement in pipes for sanitary and other purposes. The socket and spigot ends are so made that, when placed together, a groove or recess is formed into which cement, etc., is run.

Referring again to the importance of ventilating drains, we may mention that Mr. T. Brown, of 15, Armdale Road, Fulham, London, has introduced a New and Improved Mica Fresh Air *Inlet* Valve (*Fig.* 50). It is made to catch the wind blowing from any direction, and will fit any four-inch cast iron pipe. The advantages of this simple improvement must be self-apparent. It ensures a constant supply of fresh air in our drain pipes. The importance of *outlet* ventilators also must be

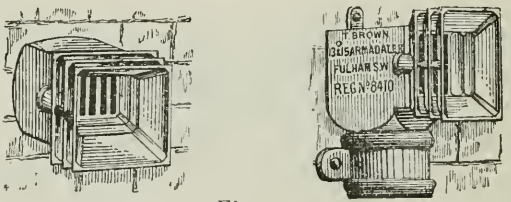
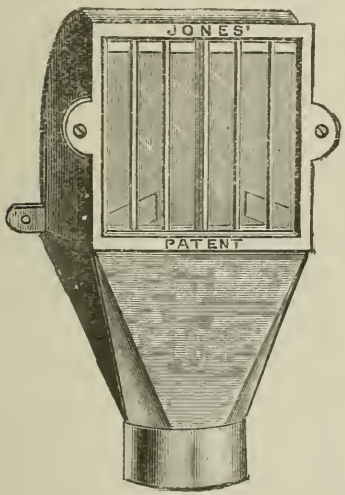


Fig. 50.

admitted, though mention should be made of the danger of rust from the inside of cast-iron pipes (when used as ventilating pipes) filling the base and so stopping ventilation. Mr. McMahon (Torquay) practically demonstrated this in 1891.

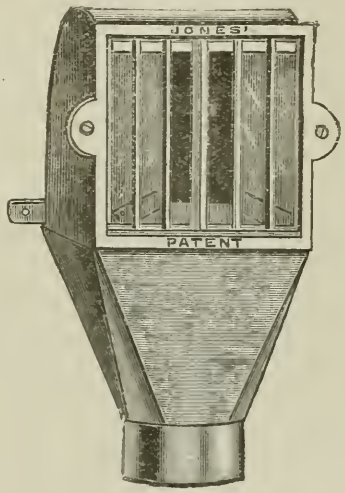
Messrs. Durrans & Sons, 43, Upper Baker Street, London, have patented the "Cone" Air Inlet Valve, by which the velocity of fresh air is increased. A small talc valve prevents the return of any foul air, *i.e.*, prevents the inlet acting as outlet. There are no corners for the collection of dust.

Mr. Jones, of Sidney Street, Chelsea, London, has also introduced an improved fresh air *inlet* ventilator (*Figs.* 51 and 52), made either in cast-iron or earthenware. The mica valve consists of two vertical mica flap doors meeting in the centre against a vertical ridge. These flap doors open and close more sensitively than the flap valve. The axes on which the mica flaps are pivoted respectively are vertical in one plane, but



Shut.

Fig. 51.



Open.

Fig. 52.

diverge from the vertical line at their upper ends. This simple mechanical arrangement ensures the prompt and efficient action of the valves in preventing a back puff of sewer gas from escaping. The shape of the ventilator is curved at the back, thus assisting the passage of air. The inventor is also the patentee of the Automatic Seal Air-Tight Manhole Covers, so well known.

That smoke is a nuisance and ought to be abated no one will deny, but the means at our disposal for so doing are few. One or two suggestions have appeared during 1891. We have the smoke annihilator of Mr. S. Elliott, of Newbury and London. The principle

is so simple that it can be described in a few words. The smoke arising from combustion is passed through water, *i.e.*, a scrubber, and washed. Thus purified the smoke (we may call it "vapour" now) passes out through the chimney. The tarry products, sulphurous and other noxious fumes left in the scrubber in solution are evaporated down and sold as fine lampblack at 1/4 per lb.*

"Narrow the throats of the chimneys" is the advice given this year by a Mr. Shaw who, to enable us to do so, has invented a metallic plate or fire brick. The idea is old, but Mr. Shaw claims that his own particular method of carrying it out belongs to 1891. The plate can be purchased at the Hope Foundry Company, Upper Thames Street, London.

Herr Koopmann has patented a smokeless fuel made in the form of briquettes by mixing dust or waste coal, powdered finely, with pitch, or some other mineral substances, to the extent of 7 to 10 per cent. The mineral ingredients on combustion produce gas, which consumes smoke and all noxious fumes. It burns without smoke, and its calorific power is good. It was introduced into England by Mr. Guy Rottmann.

A method for economising and causing the more perfect combustion of fuel with a consequent reduction of smoke has been brought out by The Gaseous and Liquid Fuel Supply Company, Limited, of Manchester, and is applicable at a small cost to any horizontal boiler furnace. Its principle is as follows:—A secondary and heated air supply burns up the CO and volatile hydrocarbons, which by means of a drop arch of fire brick blocks flow across the face of a fine wire gauze grid with sufficiently high temperature to ignite the mixture of combustible gas and air.

Dr. Délépine introduced to the Hygienic Congress an apparatus for removing smoke from the air of towns, and for using it for the disinfection of sewage. The principle of the apparatus is to divert the smoke (and all products of combustion) from the chimney into a system of pipes, by means of a water pump. The smoke is made to pass through a series of washing chambers, where the soot and soluble products are retained, and the water thus loaded with soot, etc., is allowed to mix with the sewage. In this way the air of our towns is to be entirely deprived of the products of combustion, and so fogs will become less noxious—if not a thing of the past.

Messrs. Cannon & Co., of Lincoln have lately introduced an odoriferous concentrated sanitary size for house cleaning and decoration—a much needed improvement.

* One ton of coal in burning = 4 lbs. lampblack.

The Sanitas Company, Limited, Bethnal Green, London are still going ahead, and have recently patented a very useful and ingenious disinfector called the "Sanitas" disinfector. It is a simple appliance for the automatic and continuous purification of the air of dwellings, sickrooms, cellars, closets, hospital wards, passages, halls, saloons, theatres, etc. It is reputed to be of special value in cases of lung and throat complaints and to be a preventive of Influenza. This latter quality ought to make the "Sanitas" disinfector a favourite. Its price is 2/6, and it requires recharging once every few months, by pouring sanitas oil slowly into the absorbent material contained therein. The active principle is the well known "camphoric peroxide" of Mr. C. T. Kingzett. the patentee of the bactericides and the preserved peroxide of hydrogen. The sanitas disinfector is different from the sanitas fumigator, the latter requiring a lamp.

SANITARY LEGISLATION, 1891.

The Public Health (London) Act, 1891, consolidates and amends all previous sanitary measures, repealing sixteen Acts wholly, and nineteen in part. It puts into the hands of metropolitan sanitary authorities very important powers, which they must either use or be made to use by the superior County Council. The Act applies to the administrative county of London, forming the area under the jurisdiction of the County Council, with the one curious exception that the County Council has no power over the city of London proper, and its sanitary authority, *i.e.*, the Commissioners of Sewers. A feature of the Act (and one that will, doubtless, give rise to comment) is the consideration shown by the Legislature to the Commissioners of Sewers, who, however, have a superior in the form of the Local Government Board, who must call them to account for not carrying out duties (section 135).

We purpose going briefly through the Act, and drawing attention to its more important sections :—

Section 1 is the keystone. It declares that it "*shall* be the duty of every sanitary authority to cause to be made from time to time inspection of their district, with a view to ascertain what nuisances exist calling for abatement under the powers of this Act, and to enforce the provisions of this Act for the purpose of abating the same, and otherwise to put in force the powers vested in them relating to public health and local government, so as to secure the proper sanitary condition of all premises within their district." House-to-house inspection is clearly made imperative by this section (see also sections 40 and 115).

Section 2 defines "nuisances," and the definition is much broader than that given in previous Acts*, for we have to deal with what is not only "a nuisance or injurious to health," but is even "dangerous to health."

* *Vide* Nuisance Removal Act, 1855, section 8 ; Sanitary Act, 1866, section 19 ; Public Health Act, 1875, sections 91-111 ; Factory and Workshop Act, 1878, sections 3 and 4.

We may mention here the various nuisances (scattered throughout the Act) which are liable to be dealt with for abatement and prevention :—

(1) Nuisances liable to be dealt with *summarily* :—

(*a*,) Any premises in such a state as to be a nuisance or injurious or dangerous to health [section 2 (*a*)].

(*b*,) Any pool, ditch, gutter, watercourse, cistern, water closet, earth closet, privy, urinal, cesspool, drain, dungpit, or ashpit so foul or in such a state as to be a nuisance or injurious or dangerous to health [section 2 (*b*)].

(*c*,) Any animal kept in such place or manner as to be a nuisance or injurious or dangerous to health [section 2 (*c*)].

(*d*,) Any accumulation or deposit which is a nuisance or injurious or dangerous to health [section 2 (*d*)].

(*e*,) Any house, or part of a house, so overcrowded as to be injurious or dangerous to the health of the inmates, whether or not members of the same family [section 2 (*e*)].

(*f*,) Any such absence from premises of water fittings as is a nuisance by virtue of section 33 of the Metropolis Water Act, 1871, set out in the first schedule to this Act [section 2 (*f*)].

(*g*,) Any factory, workshop, or workplace, which is not a factory subject to the provisions of the Factory and Workshop Act, 1878, relating to cleanliness, ventilation, and overcrowding, and (1,) Is not kept in a cleanly state and free from effluvia arising from any drain, privy, earth closet, water closet, urinal, or other nuisance ; or (2,) Is not ventilated in such a manner as to render harmless as far as practicable any gases, vapours, dust, or other impurities generated in the course of the work carried on therein, that are a nuisance or injurious or dangerous to health ; or (3,) Is so overcrowded while work is carried on as to be injurious or dangerous to the health of those employed therein [section 2 (*g*)].

(*h*,) Any premises used by a sanitary authority for the treatment or disposal of any street-, or house-, refuse, as distinct from the removal thereof, which are a nuisance or injurious or dangerous to health [section 22 (2)]. §

(*i*,) Any fireplace or furnace which does not, as far as practicable, consume the smoke arising from the combustible used therein, and which is used for working engines by steam, or in any mill, factory, dyehouse, brewery, bakehouse, or gaswork, or in any manufacturing or trade process whatsoever ; and any chimney (not being the chimney of a private dwelling house) sending forth black smoke in such quantity as to be a nuisance [section 24].

(*j*,) An occupied house without a proper and sufficient supply of water [section 48 (1)].

(*k*,) A tent, van, shed, or similar structure used for human habitation, which is in such a state as to be a nuisance or injurious or dangerous to health, or is so overcrowded as to be injurious or dangerous to the health of the inmates, whether or not members of the same family [section 95 (1)].*

§ County Council is to take action in this case.

* Any vessel lying in any river or other water within the district of a sanitary authority shall (subject to the provisions of this Act with respect to the port sanitary authority of the port of London) be subject to the jurisdiction of that authority in the same manner as if it were a house (section 110).

(2) Nuisances liable to be dealt with *by fines*:—

(*a*,) If a person causes any drain, water closet, earth closet, privy, or ashpit, to be a nuisance or injurious or dangerous to health by wilfully destroying or damaging the same, or any water-supply, apparatus, pipe, or work connected therewith, or by otherwise wilfully stopping up, or wilfully interfering with, or improperly using the same, or any such water-supply, apparatus, pipe, or work, he shall be liable to a fine not exceeding *five* pounds [section 15].

(*b*,) Nuisances arising from any snow, ice, salt, dust, ashes, rubbish, offal, carrion, fish, or filth, or other matter or thing in any street [section 16 (1*a*)].

(*c*,) Nuisances arising from any offensive matter running out of any manufactory, brewery, slaughter-house, knacker's yard, butcher's or fishmonger's shop, or dunghill, into any uncovered place, whether or not surrounded by a wall or fence [section 16 (1*b*)].

(*d*,) Nuisances arising from the keeping of animals on any premises in such place or manner as to be a nuisance or injurious or dangerous to health [section 16 (1*c*)].

(*e*,) No person shall (1,) Feed or keep any swine in any locality, premises, or place, which is unfit for the keeping of swine, or in which the keeping or feeding of swine may cause a nuisance or be injurious to health; or (2,) Permit any swine to stray or go about in any street or public place, under penalty of a fine [section 17 (1)].

(*f*,) Where any manufactory, building, or premises used for any trade, business, process, or manufacture, causing effluvia, is certified to the sanitary authority by their medical officer of health, or by any two legally qualified medical practitioners, or by any ten inhabitants of the district of such authority, to be a nuisance or injurious or dangerous to the health of any of the inhabitants of the district, such authority *shall* make a complaint, and if it appears to the petty sessional court hearing the complaint that the trade, business, process, or manufacture, carried on by the person complained of is a nuisance, or causes any effluvia which is a nuisance or injurious or dangerous to the health of any of the inhabitants of the district, then, unless it is shown that such person has used the best practicable means for abating the nuisance, or preventing or counteracting the effluvia, the person so offending (being the owner or occupier of the premises, or being a foreman or other person employed by such owner or occupier) shall be liable to a fine not exceeding *fifty* pounds [section 21 (1)].

(*g*,) If any sanitary convenience (used in common by the occupiers of two or more separate dwelling-houses, or by other persons), or the approaches thereto, or the walls, floors, seats, or fittings thereof, is or are in the opinion of the sanitary authority, or of their sanitary inspector or medical officer of health, in such a state as to be a nuisance or annoyance to any inhabitant of the district for want of the proper cleansing thereof, such of the persons having the use thereof in common as may be in default, or, in the absence of proof satisfactory to the court as to which of the persons having the use thereof in common is in default, each of those persons shall be liable to a fine not exceeding *ten* shillings [section 46, (2)]*.

* This section (as well as section 15) touches upon an important legislative advance, *i.e.*, the endeavour to supply landlords, or owners, with some sort of control (legal, if necessary,) over neglectful tenants.

By section 3 "any person" *may* give information to a sanitary authority of the existence of a nuisance, but relieving officers *must* give such information, subject to regulations made by the authority having control over them, *i.e.*, the board of guardians. This is extra duty put upon relieving officers. Every officer of a sanitary authority *must* also give information of a nuisance, and further, must, after directions from the sanitary authority, serve a "written intimation" (which is not legal) upon the party or parties offending. If the "written intimation" is not attended to it becomes by section 4 the duty of the sanitary authority themselves to give a formal *written* legal notice, which may, or may not, specify the necessary works to be done. As no legal notice can be served until the sanitary authority meets, there will be just as much time lost as formerly before a nuisance can be dealt with legally.

Section 12 is important, as it gives power to "any person" to complain to a magistrate of the existence of a nuisance. This is a slight to the officers of a sanitary authority, and strange to say the magistrate has the option of ordering an examination of the premises (where the nuisance is alleged to exist) to be made, not necessarily by an officer of the sanitary authority, but by any constable, *or* other person. This transforming of constables or other persons into amateur sanitary inspectors is a distinct flaw in the Act, and may lead to confusion.

Section 13 gives a sanitary authority power to proceed in High Court for abatement or prohibition of a nuisance, even where the cause of nuisance arises without the district [section 14].

At last, by section 15, some power is given to a landlord over a tenant for neglect to take proper care of a drain, water closet, earth closet, privy, or ashpit, so as to let it become a nuisance. This is an important section, and one much needed. If the elementary principles of hygiene (and especially cleanliness) could only be inculcated into some tenants, there would be fewer nuisances, and fewer worries for landlords. Surely the time has come when landlords ought to have some claim against tenants who remove doors, covers of cisterns and dustbins, etc., and use them for firewood! There is, apparently, an endeavour on the part of the Legislature to prevent "the lower classes taking their slum habits to model dwellings."

Section 16 makes it compulsory upon sanitary authorities to make *bye-laws* :—

(*a*,) For the prevention of nuisances arising from any snow, ice, salt, dust, ashes, rubbish, offal, carrion, fish, or filth, or other matter or thing in any street.

(*b*,) For preventing nuisances arising from any offensive matter running out of any manufactory, brewery, slaughter-house, knacker's yard, butcher's or fishmonger's shop, or dunghill, into any uncovered place, whether or not surrounded by a wall or fence.

(*c*,) For the prevention of the keeping of animals on any premises in such place or manner as to be a nuisance or injurious or dangerous to health; and

(*d*,) As to the paving of yards and open spaces in connection with dwelling-houses.

The County Council *must* make bye-laws :—

(*a*,) For prescribing times for the removal or carriage by road or water of any fæcal or offensive or noxious matter or liquid in or through

London, and providing that the carriage or vessel used therefor shall be properly constructed and covered so as to prevent the escape of any such matter or liquid, and to prevent any nuisance arising therefrom ; and

(*b*,) As to the closing and filling up of cesspools and privies, and as to the removal and disposal of refuse, and as to the duties of the occupier of any premises in connection with house refuse, so as to facilitate the removal of it by the scavengers of the sanitary authority.

It may be mentioned that there are other bye-laws to be drawn up by sanitary authorities and the County Council. Thus :—

(1) The sanitary authorities *must* also make bye-laws :—

(*a*,) For the keeping of water closets supplied with sufficient water for their effective action [section 39 (2)] ;

(*b*,) For the securing of cleanliness and freedom from pollution of tanks, cisterns, and other receptacles used for storing of water used or likely to be used by man for drinking or domestic purposes, or for manufacturing drink for the use of man (section 50) ;

(*c*,) For houses let in lodgings (not common lodging houses), *e.g.*, in respect to regulating, registering, inspecting, cleansing, etc., the same (section 94) ;

And *may* make bye-laws :—

(*a*,) For the decent conduct of persons using any public lavatories, ashpits, or sanitary conveniences, where provided and maintained by a sanitary authority (section 45) ;

(*b*,) For removing to any hospital to which that authority are entitled to remove patients, and for keeping in that hospital so long as may be necessary, any persons brought within their district by any vessel, who are infected with a dangerous infectious disease [section 66 (3)] ;

(*c*,) For the management, and charges for the use, of mortuaries (section 88) ;

(*d*,) For promoting cleanliness in, and the habitable condition of, tents, vans, sheds, and similar structures used for human habitation, and for preventing the spread of infectious disease by the persons inhabiting the same, and generally for the prevention of nuisances in connection with the same (section 95)*.

(2) The County Council *must* also make bye-laws :—

(*a*,) With respect to dairies and dairymen (if authorized (section 28) to do so by the Local Government Board) ;

(*b*,) With respect to water closets, earth closets, privies, ashpits, cesspools, and receptacles for dung, and the proper accessories thereof in connection with buildings, whether constructed before or after the passing of this Act (section 39) ;

And *may* make bye-laws :—

(*a*,) For regulating the conduct of businesses specified in section 19, which are for the time being lawfully carried on in London, and the structure of the premises on which any such business is being carried on, and the mode in which the said application is to be made.

* *Regulations* may be made by a sanitary authority : (1,) As to management of public lavatories, ashpits, or sanitary conveniences (section 45) ; and (2,) As to management of places for *post-mortem* examinations (section 90).

Strange to say, the sanitary authority are responsible for the carrying out of the above bye-laws of the County Council, as well as for the observance and enforcement of their own : and by section 142 (3) it is necessary for the Local Government Board to sanction all bye-laws, whether made by the sanitary authority or the County Council. This represents how the Bill was finally developed to suit the views of centralization and decentralization !

Sections 19 to 22 deal with offensive trades, making it penal to the extent of £50 for the establishment anew in the metropolis of any of the following businesses, *e.g.*, blood boiler, bone boiler, manure manufacturer, soap boiler (with one proviso), tallow melter, or knacker ; whilst others are to be established anew only with the consent of the County Council. Cowhouses and slaughter-houses are to be licensed once yearly by the County Council. The removal (collection or depositing) of house and street refuse by a sanitary authority comes within the definition of offensive trades, and the County Council *may* take proceedings, with the consent of the Local Government Board ; and the premises used for the treatment and disposal of the same, when a nuisance, or injurious or dangerous to health, shall be a nuisance liable to be dealt with summarily by the County Council, as explained at page 564 (*supra*).†

Sections 23 and 24 relate to smoke consumption. The law is simplified, the police are knocked out, and the sanitary authority is left master of the situation, with power of entry if necessary. This will give extra work to inspectors. Are they to inspect from four to six a.m.?

Sections 25, 26, 27 deal with workplaces or workshops, and bakehouses, which now have to be supervised by the sanitary authority, who have powers themselves of lime washing, cleansing, and purifying workplaces or workshops in case of default of owner or occupier.

Sections 29 to 36 deal with removal of refuse, cleansing of streets, etc., by the sanitary authority under a penalty for neglect. The sweeping and cleansing of the footways and watercourses adjoining the premises is to be done in future by the sanitary authority, and not by the owner or occupier as formerly*. The periodical removal of manure, etc., from stables, cowhouses, etc., is insisted upon.

Section 42 is a stroke against the jerry builder ; for if a water closet or drain is improperly constructed or repaired, so as to be a nuisance or injurious or dangerous to health, the person who undertook or executed such construction or repair shall be liable to a fine, unless he can show that he himself is not to blame.

Section 47 deals with unsound food (including every article of food, whether solid or liquid, and not as formerly certain articles only).

Section 48 defines an occupied house without a sufficient and proper water supply to be a nuisance within the act ; and if it be a dwelling-house, to be unfit for human habitation. In regard to new or rebuilt houses, the sanitary authority *must* give a certificate to the effect that there is a proper and sufficient water supply before such houses can be occupied as dwelling-houses.§ This gives to sanitary authorities great power, which they must wield with caution.

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* *Vide* 57 Geo. III., c. 29, section 63 (Michael Angelo Taylor's Act) ; 2 and 3 Vict., c. 47, section 60 (6) (Metropolitan Police Act) ; 18 and 19 Vict., c. 120, section 117 (Local Management Act), all repealed.

§ See Public Health (Water) Act, 1878.

By section 49 a written notice (within twenty-four hours) is to be sent by a water company to a sanitary authority *re* cutting off of water supply from any inhabited dwelling-house for non-payment of rates, etc., under penalty of a fine.

Sections 55, 56, 57 reprint the provisions (amended) of the Infectious Diseases (Notification) Act, 1889—one important and valuable amended provision being that it is now made compulsory for the medical officer of health to send a copy of a notification certificate (within twelve hours of receiving the same) to the head teacher of the school attended by the patient (if a child), or by any child who is an inmate of the same house as the patient ; as well as to the metropolitan asylums managers, as at present. Buildings, vessels, tents, vans, sheds, or similar structures used for human habitation (except such as belong to the Queen or vessels belonging to any foreign government), must be treated as if they were "houses."

Section 69 is new and important. It prohibits infected persons from carrying on business (*e.g.*, milking animals, picking fruit, etc.) ; and sections 58 to 74 extend the powers of the Infectious Diseases (Prevention) Act, 1890, though still without a repeal of section 4 of the original Act, which section must be inoperative owing to its red-tapeism.

Section 80 points out that the expenses incurred by the metropolitan asylums managers in their hospitals for the maintenance of a non-pauper patient suffering from fever, smallpox, or diphtheria, are not to be recoverable from that patient, but are to be a charge on the metropolitan common poor fund. This is only right.

Sections 82 to 87 refer to an epidemic visitation, and are very valuable, giving to sanitary authorities great powers in such an emergency.

Section 88 enacts that mortuaries *must* now be provided and fitted up by every sanitary authority ; and section 90 calls upon a sanitary authority (if required so to do by the County Council) to provide places for *post-mortem* examinations (otherwise than at a workhouse)—but it rests with the County Council, by agreement with a sanitary authority, to provide proper accommodation for the holding of inquests, either in connection with a mortuary, or *post-mortem* room, or other building.

Section 93 enables the County Council to supply a morgue or morgues for London. The rules and regulations for such morgues are to be drawn up by the Secretary of State.

Section 96 deals with underground rooms occupied as dwellings. The discovering and the reporting of these underground rooms are now in the hands of the officers of the sanitary authority, instead of, as formerly, in the hands of the district surveyors.

Section 99 (4) enables a sanitary authority to delegate to a committee the carrying out of all the duties of this new Act.

Sections 100 and 101 empower the County Council to do any act or acts which the local sanitary authority neglect to do, with recovery, of course, of costs from such sanitary authority ; or the County Council may report to the Local Government Board, who, after due enquiry, may order the defaulting sanitary authority to perform their duties in a limited time, failing which the Local Government Board may issue a writ of mandamus, or may order the County Council to perform the necessary duties, with power to levy a rate if necessary. The Local Government

Board only interfere where the County Council cannot. No sanitary authority will, probably, be found wanting now that the County Council and Local Government Board are prepared any moment to "pounce" upon them and do the necessary works at that sanitary authority's expense.

Section 107 refers to the compulsory appointment of an adequate number of fit and proper persons, who are to be called "sanitary inspectors," with powers given to the Local Government Board, on a representation from the County Council, and after local enquiry, to appoint a sufficient number of additional inspectors, if a sanitary authority refuse to do so.

A general complaint book of all infringements against the provisions or bye-laws of this Act is to be kept ; and into another special book are to be entered, after being submitted to the sanitary authority, inspectors' reports of nuisances, with the orders of the sanitary authority thereon. This latter book shall be open to inspection by any inhabitant of the district, or by an officer of the County Council duly authorised (section 107).

A written authority *must* be produced, if required, by any officer or member of a sanitary authority, or other duly authorized person (section 115), for the purposes of examining or entering any premises, whether a building, vessel, tent, van, shed, structure, or place, open or enclosed, either generally or in any particular case.

The account of the Act, as epitomized above, will give an idea of the rapid strides sanitation must be making in all directions to enable such a stringent legislative measure to be passed ; though the stringency of the new Act will probably prevent it becoming popular with authorities, and this fact (together with the necessity for uniformity of action in administering) makes it important that it should have been even more completely a centralization measure. It remains only for sanitary authorities to enforce our sanitary Acts.

It is unfortunate that the new Act does not yet apply to the whole country, although doubtless it will do so shortly, as it must be remembered that sanitation is making, perhaps, greater strides in some parts of the country than in London. The Act of 1875, again, has weak points, and a new Act is needed to simplify and strengthen our sanitary code, and to place it within the reach of all.

The Government has not yet given us the District Councils Bill, which would have run very well with the Public Health (London) Act, and would have helped to complete the reform of local self-government.

Several other more or less important measures bearing upon sanitation have come into being during 1891, and it may be advantageous to refer to them briefly, in so far as they deal with sanitation.

The Technical Instruction Act, 1891 (*54 and 55 Vict., c. 4*), is an act to amend the law relating to technical or manual instruction, giving power to a local authority to arrange with a school or institution out-

side its district for the above purposes, by assisting in the payment of fees or the providing of scholarships. This Act relates to England and Ireland, and must be construed as one with the Technical Instruction Act, 1889.

The Museums and Gymnasiums Act, 1891 (54 and 55 Vict., c. 22), is adoptive for urban authorities, who thereby *may* provide and maintain museums and gymnasiums, with power to make regulations and bye-laws for the same. The Act refers to England and Ireland.

The Customs and Inland Revenue Act, 1891 (54 and 55 Vict., c. 25), deserves mention and explanation on account of section 4, which relates to sanitary matters. In 1890* a bill was brought in by Mr. Jackson, in connection with the budget, offering a money prize in the form of exemption from inhabited house duty to those owners of houses originally built or adapted to be let in separate dwellings at 7s. 6d. a week or under, who can show by certificate that their houses are so constructed as to afford suitable accommodation for each of the families or persons inhabiting them, and that due provision is made for their sanitary requirements. This section 26 (2) of the 1890 Act is amended by section 4 of the 1891 Act by the substitution of the words, "Where the annual value of each dwelling shall not amount to £20," and by the following addition :—

> "In the case of any house originally built, or adapted by additions or alterations, and used, so far as the same is used as a dwelling-house, for the sole purpose of providing separate dwellings at an annual value not exceeding £40 for each dwelling, the commissioners acting in the execution of the Acts relating to inhabited house duties shall, upon production of such a certificate as is mentioned in the previous Act, grant relief by confining the assessment to the annual value of the house exclusive of every dwelling therein of an annual value below £20 (if any), and by reducing the rate of duty to threepence."

Certificates are only to be obtained from the medical officer of health of the district in which the houses are situated, or from a legally qualified medical practitioner especially appointed to act. Medical officers of health are practically autocratic in regard to the giving of these certificates, and knowing the different opinions held by different medical officers in regard to what is, and what is not, a proper definition of "sanitary requirements," we are met by the question as to what standard ought to be adopted. In the first place, is it possible for a house to be sanitary without an interceptor, *i.e.*, some method by which the gas in the main sewer is cut off from the house drains? In what class of property are manholes, or chambers, to be

* See "Medical Annual," 1891, p. 502.

deemed necessary, and not simply intercepters? Ought the disconnection of all rain water pipes and sink, or other wastes from the drains to be insisted upon? Ought the house drains to be supplied with inlet- and outlet-ventilators? The absolute necessity of having proper sanitary w.c.s, with good water supplies, must be admitted by all, whilst the wording of the Act points to *specially constructed dwellings for the working classes*. Uniformity of action on the part of medical officers of health in regard to the carrying out of this Act is to be desired; and it is noteworthy that medical officers of health are not to be paid for their certificates; but surely when expense is incurred in the examination of premises (*e.g.*, work to expose fully to sight sections of drainage, etc.,) the applicant for a certificate ought to pay? This Customs and Inland Revenue Act, 1891, relates to Great Britain and Ireland.

Public Health (Scotland) Amendment Act, 1891 (54 and 55 Vict., c. 52), may be described as the Public Health (Water) Act for Scotland. It relates to Scotland exclusively, and is to be construed as one with the Public Health (Scotland) Acts.

The Factory and Workshop Act, 1891 (54 and 55 Vict., c. 75), breaks the back of the sweating system, and is really the outcome of the Sweating Commission so ably presided over by Lord Dunraven. All workshops or class of workshops (including workshops conducted on the system of not employing any child, young person, or woman therein) or laundries are, by order of the Secretary of State, if he thinks fit, to be brought up to the same standard of efficiency as regards cleanliness, ventilation, overcrowding, limewashing, and freedom from effluvia arising from any drain, privy, or other nuisance [section 1 (1)]. The including of laundries in this Act is a very important innovation, and was only carried after much discussion in Parliament. Power, too, is given to regulate the hours and conditions of employment in certain cases (*e.g.*, women, young persons, and children).

The expression, "injurious to the health of the persons employed therein," in the Act of 1878 (section 3), becomes in this new Act, "dangerous or injurious to the health of the persons employed therein"; whilst the word "privy" becomes water closet, earth closet, privy, urinal" (section 5). These alterations are distinct advantages.

Proper provisions against fire are rendered imperative in new or old factories in which more than 40 persons are employed (section 7). Under the certificate of the Secretary of State, the chief factory inspector may enforce such special rules and requirements as to dangerous and unhealthy incidents of employment as may be

necessary in factories and workshops (other than domestic workshops).

An amendment as to due notice being given of holidays is important (section 16).

No child under the age of *eleven* years is to be employed in factory or workshop on or after January 1st, 1893, and no woman within four weeks *after* her confinement is to be allowed knowingly to be employed by an occupier in any factory or workshop (sections 17 and 18).

Particulars are to be supplied by the occupier of a factory or workshop to any persons engaged in piecework in the following cases, *e.g.*, (*a*,) Weavers in the cotton, worsted, or woollen, or linen, or jute trades; (*b*,) Winders, weavers, or reelers, in the cotton trade; so as to enable them to ascertain the rates of wages at which they are entitled to be paid for the work. There is a useful proviso, however, to the effect that workmen must not make a disclosure of such particulars with a fraudulent object, or for the purpose of gain, under risk of a £10 penalty (section 24).

Notice must be given to a factory inspector of the occupation of a workshop (including any workshop conducted on the system of not employing any child, young person, or woman therein); and the factory inspector must forthwith forward the notice to the sanitary authority of the district in which the workshop is situated (section 26).

The Secretary of State may order that the occupier of every factory or workshop (including any workshop conducted on the system of not employing any child, young person, or woman therein), and every contractor employed by such occupier in the business of the factory or workshop, shall keep lists of outworkers, and such lists shall be open to inspection by a factory inspector, or by an officer of a sanitary authority (section 27).

This Act relates to Great Britain and Ireland, and comes into force on January 1st, 1892.

New Inventions, Improvements in Pharmacy, and Dietetic Preparations.

DIETETIC PREPARATIONS.

MEAT FOODS.—The physician who cannot persuade his patient to take a proper amount of nutriment must have a very intractable disorder to contend against, or must be insufficiently acquainted with the large number of recent preparations which help both physician and patients over their difficulties. We all have a certain class of patients who refuse meat, and who fail to digest it if they force themselves to take it. The deficiency is often made up by employing beef-tea and concentrated meat essences, and here we are likely to fall out of one mistake into another. The late Dr. Milner Fothergill asked the question in the pages of the "Medical Annual" some years ago, "Do we frequently allow our patients to perish of exhaustion, to starve to death in fact, for lack of food when ill?" and answered the question in the affirmative by pointing out how imperfectly the essences of meat, of which beef-tea is an example, supply the place of food. What we require is the albuminous and flesh-forming properties of meat, combined with other elements, so that the product is not merely a stimulant but a nutriment. We must remember also that in determining its nutritious properties we must not be satisfied with the results of chemical examination. This is merely a pitfall for the unwary. The value of a food is the amount of force it yields minus the force expended on its digestion. Chemically, cold duck is one of the most nourishing of foods, but we should not rely upon it to restore the failing energies of a dyspeptic patient.

If we take, for instance, the delicate, anæmic girl, who objects to the taste of meat and refuses soups in every form, we may tempt her appetite and overcome her caprice by offering her some neat little sandwiches prepared as follows :—

Carnrick's Beef Peptonoids - - - -	ʒss
Milk or Cream - - - - - - - - -	q.s.

Mix the milk or cream with the peptonoids (sold in the form of a dry powder) until a soft paste is produced. Spread this

on thin bread-and-butter, add a little salt to taste, and make it into sandwiches.

Nothing could be more delicate than the taste of this dish, and we are as certain of the amount of nutriment contained in the peptonoids as we are of the ease with which it is digested.

Another very excellent way of giving meat foods is by their combination with cocoa or chocolate. The **Bovril Cocoa** is, as indicated by its name, a combination of cocoa and bovril which will be taken freely by the most fastidious invalid, and a single cup contains all the elements required for the perfect nutrition of the body. The **Bovril Chocolate** has the taste of an ordinary high-class chocolate, its meaty constituents only being observable as a very slight after-taste, which is rather agreeable than otherwise. Its special use appears to be that of a portable form of nourishment, and many of our readers will probably be glad to use it on those professional rounds of uncertain termination which make so much demand upon their endurance. It is less likely to spoil the appetite than ordinary chocolate.

But when our special object is to employ a highly stimulating as well as a nutritious food, especially in conditions of great debility, which we want to be sure will be readily taken and easily digested, a very excellent preparation is **Caffyn's Malto-Carnis,** which, although not indicated by the name, is a combination *with cocoa* of their well-known **Liquor Carnis** (uncooked beef juice) and **Extract of Malt.** This preparation contains no less than 66 per cent. of the beef juice, and its value as a perfect form of nutriment for invalids is unquestionable. For the consumptive patient it provides just the diffusible proteid which is absolutely necessary to repair the excessive wear and tear of the system, and its combination with carbo-hydrates in proper proportions renders it an ideal food in such cases.

Bovinine, a beef extract, possesses undoubted properties as a nourishing food, containing 20 per cent. of coagulable albumen. It has won the esteem of all who have employed it, not only on account of the good results which have followed its use, but because of the readiness with which it can be administered. A dessert spoonful added to half a tumbler of milk is an ideal food for convalescents, and as bovinine is practically tasteless, a little chocolate solution may be added to flavour it. It may be given in water, or in weak spirit and water, providing the bovinine is added last. A few drops may be added to the milk of infants suffering from exhausting diseases, with advantage. It is decidedly one of the foods to remember when treating any disorder attended by exhaustion.

In our last issue we mentioned our objection to the use of tins for sending out the various meat essences and beef jellies. The Liquor Carnis Co. send us a "**Jelly Carnis,**" *i.e.*, a meat jelly containing 66 per cent. of Caffyn's Liquor Carnis, in a square bottle very conveniently shaped. As this contains all the nutriment of the ordinary beef essence, and in addition possesses the soluble albuminoids of raw meat juice, we strongly recommend our professional friends to give it the preference over the tinned goods.

We have also received a sample of **Armour's Extract of Beef** in a neat jar. This extract has rapidly gained in favour since its introduction, providing, as it does, all the stimulating properties of beef-tea in an easily portable form. It is particularly valuable when a stimulating nutriment is needed, and it may be rendered into a perfect food by combining it with milk or farinaceous foods.

A very useful tonic for invalids is **Carnrick's Peptonoids,** combined with **Iron** and **Wine.** Here we have concentrated beef and milk and gluten, as well as the iron and wine in the same preparation, and that a particularly pleasant one. Of its kind it is a most valuable preparation for convalescents, and especially for those whose blood is impoverished.

Tomato Soup is the latest novelty in desiccated soups prepared by Messrs. F. King and Co., of Belfast, whose productions have been favourably noticed in previous issues. The soup retains the flavour of the tomato, and forms a nourishing and appetising food, suitable both for invalids and domestic use. It may also be used for the purpose of making tomato sauce, or as a flavouring ingredient to other soups. Thus an ordinary meat jelly or extract would gain both in flavour and nutriment by the addition of desiccated tomato.

Californian Brandy.—Messrs. C. W. Pearce and Co., of 206, West George Street, Glasgow, send us a sample of "Californian Brandy," and have asked us to report upon it. The term "brandy" has been applied so long to concoctions consisting essentially of potato spirit and its allies that the term has lost its meaning, and physicians have almost entirely ceased from employing it. We notice that the label of the Californian brandy contains the statement that it is a "pure grape spirit," and this, if incorrect, would subject the vendors to prosecution under the Merchandise Marks Act. But we thought it better to have the opinion of an eminent analyst. His report shows that it contains 42·9 per cent. of pure alcohol. This would represent 11½ degrees under proof according to the English standard, or exactly proof spirit by the American

standard. It may be regarded as rather stronger than the average French brandies. A gallon of brandy yielded only 6·5 per cent. of ash, showing that it had not been treated with lead acetate, alum, or other salts frequently used to clarify brandy. The proportion of sugar is larger than in most samples of French brandy (705 grains per gallon). When taken neat, its taste resembles more closely a liqueur, and we are not sure whether the name "Grape Spirit Liqueur" would not better describe it than the word brandy. The analysis proves that it is a pure grape spirit which the practitioner can safely recommend. It must possess greater nutritious and sustaining powers than either brandy or whiskey in cases of debility or exhaustion, but it would be less suitable than the latter in cases of diabetes or gouty acidity.

COCOA and CHOCOLATE.—We have received samples of cocoa from several of the well-known makers, and they all exemplify the great progress which has been made during recent years in this branch of manufacture.

Van Houten's Cocoa is deservedly popular with invalids on account of its delicate aroma and the ease with which it can be digested. It has formed the subject of special analysis by some of the greatest of European chemists, and all concur in regarding it as a perfect beverage, both as regards strength, purity, and solubility. Its particular value is due to the fact that by the process of manufacture the nutritious elements of the cocoa bean are rendered capable of ready assimilation by the digestive organs.

Messrs. Cadbury's Cocoa shows no falling off from the high ideal which the firm has always had before them, and careful examination has failed to disprove the claim made respecting the absolute purity of their cocoa. They also send us samples of their Mexican chocolate, which is a high class production, very delicately flavoured. We have employed a solution of this to flavour milk, or meat preparations given in milk, for our more fastidious invalids, with very excellent results, and it will be found exceedingly useful for this purpose.

Cadbury's Ginger Chocolate is a combination of preserved ginger and chocolate, which might be prescribed for the smaller dyspeptic troubles of invalids, with the certainty of being regarded as a most agreeable prescription, but it would not be necessary to wait until one was an invalid before enjoying this agreeable confection.

The **Charcoal Creams** supplied by the same firm really deserve a place among "Improvements in Pharmacy," but are mentioned here for convenience. The creams are large enough to contain a full dose

of charcoal, which being tasteless and its gritty nature being altogether removed by the combination with the "Cream," has no difference in regard to taste from the ordinary chocolate cream. Prof. Dujardin-Beaumetz contributes an article to this volume on the practical importance of antisepsis of the intestinal canal in many of its diseases. Why should we not accomplish it by something really nice?

The method employed by **Messrs. Rowntree, of York,** in the preparation of their cocoa produces a very high degree of solubility, and it is consequently a very pleasant and economical cocoa for general use. In spite of its ready solubility a large amount of the fatty matter of the bean is retained.

The same firm send us some Heliotrope Chocolate Creams, which are an evidence of the high degree of perfection to which they have attained in this branch of manufacture.

Coralline.—This is not only a great novelty in farinaceous foods, but it has many excellent qualities to recommend it as an article of diet for invalids. It is made from maize, and retains all the nitrogenous or flesh-forming constituents of this cereal, while by some peculiar process of manufacture the hard grain is converted into coral-like sprays, perfectly white in colour, and so light in texture that any fluid poured over them is rapidly absorbed. One of its advantages is that it is already cooked, and can be prepared for the table by simply allowing it to absorb as much cold milk as it is capable of taking up. It comes, then, not as a "pap," but as an elegant dish, of semi-solid character. It can be prepared in a great variety of ways, and each one will have no similarity to the farinaceous foods ordinarily employed for invalids. It is exceedingly light and digestible, and costs fourpence a pound. We advise our readers to obtain some and try it themselves, feeling perfectly sure that they will agree with us in regarding it as an addition to our list of dietetic articles of the greatest possible value. It is made by the Coralline Manufacturing Co., Leadenhall House, London, E.C.

MINERAL WATERS (NATURAL AND ARTIFICIAL).—Artificial Water.—When ordering lithia, potash, and seltzer waters, there are three points which especially demand attention, viz., the purity of the water employed, its perfect aëration, and the definite strength of the mineral ingredients. We have carefully examined the waters submitted to us by Mr. Richard Davis, 20, Maddox St., Regent St., W., and we find that they meet these requirements in a most satisfactory manner. A specimen of seltzer water having been opened and exposed to a temperature of 60° F. for thirty minutes, retained a large amount

of carbonic acid gas. The samples of lithia water contained exactly 5 grains of the salt in each bottle, and the potash and soda waters were pure waters containing the proper ingredients in definite proportion. We are as particular concerning the source of the mineral waters used by patients as we are of the wines they employ, and we should not hesitate to recommend those manufactured by the above-mentioned firm.

Æsculap Water.—As an aperient mineral water Æsculap maintains the reputation which it so well deserves. It contains the sulphates of soda and magnesia in large quantities, but it is less disagreeable to take than some mineral waters of a similar class. It contains in addition lime, iron and silica, which to some degree obviate the depressing effect of a purgative salt, which has to be regularly taken. In cases of anæmia and dyspepsia, we have used the water in small doses, repeated several times a day, with great advantage. It appears to favourably influence the manufacture of healthy blood, correct the digestive secretions, and antidote the tendency to venous congestion. We doubt if the full value of this Hungarian spring is even yet appreciated.

Flitwick Chalybeate Spring.—This is one of the not least remarkable of our native products. To describe it as a simple chalybeate water and class it with springs of a similar character would be doing an injustice to one of the productions of nature's laboratory. The mere presence of iron in a water is no indication that it possesses qualities in any way superior to the ordinary chemical solutions. It is the physical state in which the iron exists which determines the quality, and the readiness with which it can be absorbed into the blood. The iron in the Flitwick water appears to exist as a persulphate, a gallon of the water containing about 170 grs., together with about 28 grs. sulphate of alumina, and 14 of soda, but so lightly is the iron suspended that merely warming the fluid, or even the addition of a quantity of water throws it out of solution. It is thus the antithesis of the Bath mineral water, the iron in which is deposited as the water cools from its natural temperature (117° F.). The Flitwick water has an agreeable, slightly acid taste, and those who have used it in their practice as a remedy for anæmia, chlorosis and debility, speak in the highest terms of the results obtained. This is after all the only real test of the value of a mineral water, and we think the evidence brought forward abundantly justifies its further trial in the treatment of such cases. The Flitwick Depôt is at 63, High Street, Borough, London, S.E.

Johannis Mineral Water.—We were well pleased by the taste and refreshing nature of this natural effervescing water, and we have submitted it to careful examination. We find that it contains the carbonates of lime, magnesia, and soda. It is particularly well charged with carbonic gas. The remainder of a bottle opened and recorked exhibited marked effervescence after four days. The carbonic gas is also exceptionally pure, being the natural gas collected from the springs. As we were aware that the native spring contained iron, and this salt was practically absent from the specimen we examined, we were curious to know the cause. It appears that as iron would be hardly a suitable ingredient for waters intended for ordinary table use the water before being bottled is allowed to stand exposed to the atmosphere, so that the proto-carbonate of iron which it contains becomes converted into an insoluble oxide and is deposited. The bottled water contains in addition to the ingredients we have mentioned minute proportions of silica and chloride of sodium. As a table-water we consider that Johannis is unsurpassed, and we believe that all who try it will hold the same opinion.

Levico Arsenio-Ferric Mineral Waters.—Levico, a small town situated near Trentino, South Tyrol, has become within the last few years a very famous health resort. The thermal establishment situated at a height of 4,500 feet above sea level is annually visited by thousands of patients suffering from anæmia, chlorosis, chronic scaly skin diseases, etc. The waters are under the control of the Austrian Government, and it is only of recent date that permission has been granted for their exportation. Mr. Frazer Rae, in his letters to the "Times," first drew the attention of English physicians to the value of these waters, stating that he has witnessed some very remarkable cures. The papers by Mr. Rae are now published together in one volume, entitled "Austrian Health Resorts." There are two springs. One situated in the Vitriolo Cave is four hundred and fifty feet deep, and yields the water richest in mineral salts, containing the equivalent to $\frac{1}{12}$ gr. of arsenious acid and 34 grs. of proto-salts of iron per pint, with a good percentage of alkaline sulphates. The other spring yields a much weaker water, containing $\frac{1}{125}$ gr. of arsenious acid and 8 grs. proto-salts of iron, and a corresponding reduction of the alkaline sulphates. The waters are clear and possess a ferruginous taste; this, however, is completely covered when the water is taken with wine or milk, with which it is perfectly compatible. The treatment consists of starting with the *mild* water in tablespoonful doses, gradually increasing the dose for forty doses, then taking tablespoonful doses of the strong for a time, and leaving off with the *mild*. The waters

are analyzed by the Government analyst, and sent direct to Europe. They are comparatively palatable, are readily assimilated, do not constipate, cause gastric irritation, nor blacken the teeth. The Levico waters are supplied in half-pint bottles, by Messrs. Burroughs, Wellcome & Co.

Salutaris Water.—This is simply a pure distilled Water charged with carbonic acid gas. Its value as a table-water is universally recognized, and it is the best water to prescribe for gouty patients or those suffering from gravel, when the solvent action of water is required. It is procurable from the Salutaris Water Co., 236, Fulham Road, London.

Tarasp Spring Salt.—This is obtained by evaporation of the water of the Lazius spring Tarasp. On analysis this is found to contain soluble salts in the following percentage :—

Sulphates of sodium and potash -	20·329 per cent.
Common Salt - - - -	30·114 per cent.
Bicarbonate of soda - - -	39·942 per cent.
„ „ magnesia - -	8·000 per cent.
Iodide and bromide of sodium -	0·180 per cent.
Borate of soda - - - -	1·410 per cent.
Chloride of lithium - - -	0·025 per cent.
Bicarbonate of calcium - -	traces
	100·000 per cent.

It is used as a laxative in chronic, gastric and intestinal catarrh, and for sluggish action of the liver. It is found particularly useful in those cases of gout in which there is abdominal plethora, and the deposition of urates in the urine. By the addition of tartaric acid the salt may be converted into an effervescing drink resembling seidlitz powders, with the advantage over them that the powders need only be dissolved in half a wine glassful of water, the necessary quantity of salt being much less than with the ordinary effervescing powders. We think the neat little effervescing powders introduced by the Tarasp-Schuls Company will entirely take the place of the ordinary "seidlitz powder" when their advantages become more extensively known.

ANTISEPTICS AND DISINFECTANTS.

Boro-glyceride.—Although the new antiseptics which have been introduced during the past few years are so numerous that it is a matter of difficulty even to remember their names, there is not one in the whole list which can claim to be so innocuous as boro-glyceride. After

an extensive trial during many years where it has been taken as a part of the daily food, no injurious effect has been discovered as a result of its use. Its antiseptic powers are amply proved by the fact that fish, meat and milk treated with it have remained sweet and good for weeks and months, even when exposed to a tropical climate. The question arises whether physicians and surgeons might not more frequently use this valuable preparation in affections of the throat, nose and vagina, combining as it does the effects of an antiseptic and soothing application, which may be used with absolute safety. For dryness and roughness of the skin nothing is more serviceable than a lotion composed of two teaspoonfuls of boro-glyceride to the pint of water.

Chloro-Phenol.—This is a new disinfectant introduced by Messrs. Hargreaves & Son, 108, Fylde Road, Preston. It is prepared in the form of a liquid, a powder, lozenges, and soap. These preparations contain chloro-phenol in varying proportions, and are adapted to the various uses which may be made of it.

The liquid has an odour resembling creasote ; it is freely soluble in water, and its solution is an efficient deodorant and antiseptic. The powder is moist, resembling brown sugar ; this consists of the chloro-phenol solution (10 per cent.) combined with sulphate of soda. This is also freely soluble, and may be used as an antiseptic. The lozenges contain about ¼ minim of chloro-phenol, and are not unpleasant to the taste. They should prove useful for the antisepsis of the intestinal canal, the importance of which for many of its diseases forms the subject of a paper by Prof. Dujardin-Beaumetz, in this volume.

The **Chloro-Phenol Soap** appears to us to be an efficient antiseptic and deodorant, suitable for all the purposes for which such a soap is required.

The Eucalyptus Automatic Vaporiser.—Under this name, Dr. W. H. Spencer, of St. Leonards, has patented a little appliance for vaporising oil of eucalyptus by means of the heat of a night-light. It consists of a vessel for containing the eucalyptus, which slides between two upright bars, so that it can be raised or lowered to the proper height above the flame. A thermometer is placed above the vessel, so that the exact heat can be determined. It costs 15s., and is manufactured by Messrs. Coxeter & Sons, of Grafton Street. We have not had an opportunity of testing the apparatus, but we have constantly used a similar appliance, which is sold in the chemists' shops for 1s., and which answers the purpose so well that we can hardly predict an extensive sale for this "invention," which has the disadvantage of requiring specially made night-lights to be used in it.

Eucalyptus Oil.—The value of the vapour of eucalyptus as a disinfectant in cases of diphtheria was brought before the medical profession many years ago by Dr. Percy Wilde. It has since proved useful in cases of scarlatina, and more lately it has been extensively employed in connection with the Influenza epidemic. Considering the abundant source of the remedy, it is extraordinary that it should be so difficult to obtain good preparations, and some of these which trade particularly on the repute of eucalyptus as a disinfectant are simply detestable combinations unfit to introduce into a sick room. Those who have used the pure volatile oil will at once recognize it. The specimen sent to us by the Timbury Eucalyptus Oil Co., of Queensland, is of such special excellence that we would particularly ask those who may be testing the efficacy of eucalyptus in the many conditions for which it is really valuable to employ this product. It can be obtained through Mr. H. F. C. Monninger, the Company's European manager, 124, Clerkenwell Road, London, E.C.

The "**Iodofume**" and "**Bromofume**" **Night Lights** forwarded us by Messrs. Hertz & Collingwood furnish a novel and valuable method of disinfecting the sick-room.

The first contain 1 per cent. of iodine, the vapour of which is diffused during the combustion of the night-light. The second contains bromine, which in its fluid state is a valuable disinfectant, but very difficult to employ; but in this form the night-light, while fulfilling its ordinary purpose as a luminant, adds sufficient bromine to the atmosphere of the room for all sanitary purposes, without any unpleasant effect upon the patient. It appears to us probable that the Bromofume Night-light might have a favourable influence upon whooping-cough, and that both might be used with advantage in the sick-rooms of patients suffering from diphtheria, croup, and other infectious diseases.

Tuson's Disinfectants.—These preparations are not derived from the recent additions to our list of antiseptics, but are a practical and scientific method of employing two of the best antiseptics and disinfectants known.

Tuson's Fluid consists of a solution of chloride of zinc impregnated with eighty times its bulk of sulphurous acid gas; in other words, one pint of the liquid contains eight ounces of chloride of zinc and ten gallons of gas. The former ingredient will effectually prevent the putrefaction of any solid or liquid animal or vegetable matter with which it may come in contact, while the sulphurous acid will rapidly pass off in the gaseous state into the surrounding air and act as an energetic destroyer of noxious atmospheric impurities.

Dr. Wernich, of Breslau, states that air containing from 4 to 7·17 per cent. of its volume of sulphurous acid completely prevents infection. There can be no doubt as to the thorough efficiency of this disinfectant, or as to its manifest superiority over a large number of preparations which are commonly used for the same object.

It leaves no smell behind it after use ; but in bulk the very pungent odour of sulphurous acid would render any chance of its being taken internally by mistake out of the question.

Tuson's Powder consists of equal parts of sulphite of lime and sulphate of alumina, with 15 per cent. of sulphate of zinc. Exposed to ordinarily moist air, and more rapidly when damped (for example, by being sprinkled over the contents of cesspools, night-stools, or over offal, litter, manure-heaps, etc.), the sulphite of lime and sulphate of alumina suffer mutual decomposition, whereby sulphurous acid, amounting to about one-fifth of the weight of the powder, is evolved in the gaseous state (1 lb. of powder will evolve 7 gallons of gas), and there remains behind, in the solid condition, sulphite of lime and sulphate of zinc. The sulphurous acid diffuses into the atmosphere and acts as a disinfectant as well as a destroyer of bad smells ; the sulphite of lime absorbs ammonia, and the sulphate of zinc prevents putrefaction and absorbs ammonia and sulphuretted hydrogen. It will be seen, therefore, that both while undergoing chemical change and after it, Tuson's Powder is actively engaged in the work of absorbing or destroying noxious gases. It is well worth the attention of the profession.

PROGRESS OF PHARMACY.

We have received samples of the following :—

Ant-Acid Tabloids.—These are prepared in accordance with the formula of Sir William Roberts. Each tabloid contains calc. carb. precip. 3½ grains, magnes. carb. 2½ grains, sod. chloride 1 grain. They are recommended by Dr. Burney Yeo as an addition to milk in typhoid fever, and their use as an ant-acid in dyspepsia is well known. They are prepared by Burroughs, Wellcome & Co.

Aniline.—Kremianski reports very favourable results from the use of aniline by inhalation, and as an application in the form of an ointment rubbed in under the clavicle. Messrs. Ferris & Co., of Bristol, send us an aniline ointment made in accordance with his formula, which was published in the "Lancet," June 1st, 1889. It is well worthy of a trial at the hands of British practitioners.

Bi-Palatinoids.—In our last issue we expressed our great appreciation of the method of administering medicine introduced by Messrs. Oppenheimer Bros. The palatinoid, as our readers are aware, consists of two concave gelatine discs, joined at their edges, and between which the medicament is enclosed. A more recent improvement is the use of this method for administering two separate salts in one palatinoid, so prepared that they do not mix until they reach the stomach, when they form a fresh solution of the chemical combination which is desired for the purpose of treatment. These are termed bi-palatinoids (*Fig.* 53). Thus in the administration of Blaud's Pill, it is difficult to secure the ferrous carbonate in an un-oxidized state, but by means of the bi-palatinoid the ferrous carbonate is formed in the digestive canal, so that an absolutely reliable preparation is obtained by the use of this most ingenious method. The same means of keeping the salts separate until they reach the stomach is employed in the administration of ferrous phosphate and ferrous arseniate, so that the impurities in these salts, which are allowed by the Pharmacopœia because no way was previously known of avoiding them, is absolutely got rid of. In the case of ferrous phosphate the allowed impurity is 53 per cent., and a preparation which at once clears all risk of even a fractional impurity is well worthy of the attention and the gratitude of the profession.

Fig. 53.

The palatinoid (*Fig.* 54) and bi-palatinoid offer other very distinct advantages. The accuracy of dosage, the freedom from all excipients, and the protection of the contained ingredients from atmospheric influences and freedom from smell or taste, seem to recommend them both to practitioners and patients, and their use will extend as rapidly as their utility becomes known.

Fig. 54.

Boni's Blister.—This is probably the best and least painful of all blistering fluids which have yet been made. It consists of camphor (20 parts), chloral hydrate (30 parts), cantharides in powder (10 parts). Its manufacture requires both skill and practice, and the sample sent us by Messrs. Ferris & Co. is a perfect pharmaceutical preparation. It may be simply painted over the part, or applied on a piece of lint.

Cadinum Saponatum (Liniment.)—Dr. Vidal considers that the oil of cade is the most suitable application for psoriasis in the great majority of cases. The following is the formulæ he employs: glycerole of starch (100 parts), green soap (5 parts), oil of cade (100 parts). This he directs to be applied each night. Messrs. Ferris & Co. send us a sample of this

formula as prepared by them, and we find it a much easier and more effective application than the oil of cade used alone. It is well made, and makes an elegant preparation.

Capsici Fluid (Emp.).—This is a strong ethereal tincture of capsicum with collodion, which rapidly dries, leaving a thick film, when applied to the skin. It is an excellent counter-irritant in external treatment of sub-acute gout, chronic gout, chronic articular rheumatism, etc. It is prepared by R. Sumner & Co., of Liverpool.

Chrysarobin and Ichthyol (Ointment).—This ointment, with which Dr. Unna, of Hamburg, has obtained some very encouraging results in the treatment of leprosy, has been sent us by Messrs. Ferris & Co., of Bristol. It contains, in addition to 5 per cent. each of the drugs we have mentioned, 2 per cent. of salicylic acid. It should prove useful in some cases of psoriasis, and other skin diseases.

Cascara Sagrada.—Judging by the number of samples sent us during the past and previous years, this remedy appears to be in great demand.

Cascara Tabloids (Burroughs, Wellcome & Co.).—Contain 2 grains of dry extract, equivalent to 20 minims fluid extract, prepared by careful manipulation from fully matured cascara sagrada bark. They are coated with sugar, and owing to their lenticular shape are easily swallowed. The cascara tabloids do not gripe, and afford excellent results in constipation. They are an agreeable method for prescribing this drug.

Ext. Cascara Sagrada Liq. (Tasteless).—R. Sumner & Co., Liverpool. This preparation is entirely freed from the acrid principle, while at the same time it retains considerable activity as a laxative. Its taste is wholly unobjectionable, and the preparation should prove of great value for dispensing purposes.

Mist. Cascara Sagrada Co. (Mackey, Mackey & Co., 1, Bouverie Street, London, E.C.).—This preparation is combined with aromatic syrup which renders it much more palatable than the ordinary liquid extract, and is effective in one drachm doses, taken three times a day, and can be prescribed without adjuvants.

Cascara Chocolate Bon-bons (Ferris & Co., Bristol). This is a very elegant method of prescribing this drug, which we noticed in a previous issue. The taste is quite disguised by the chocolate, and children take the bon-bons readily.

Cerium.—The use of oxalate of cerium, both as a remedy for cough and for the vomiting of pregnancy, has steadily increased, and in the latter case especially, the success of the remedy will depend greatly

upon the manner in which it is administered. The preparations sent us by Messrs. R. Sumner & Co., of Liverpool, particularly commend themselves to us. Liq. cerii is a solution of the oxide combined with citric acid and ammonia, the dose of which is ℥j. The other is liq. cerii c. bismuth, which contains the properties of bismuth and cerium, and should prove a valuable agent in the treatment of dyspeptic disorders, associated with vomiting.

Mist. Cerii Co.—Prepared by Mackey Mackey & Co., of 1 and 2, Bouverie Street, contains tincture of nux vomica and hydrocyanic acid, and will doubtless prove a useful stomachic tonic in many of the cases in which cerium is indicated.

Cocaine Thimble.—A new method of introducing cocaine into the uterus to ease the pain of parturition is provided by the Thimble-Pessaries of Messrs. R. Sumner & Co., of Liverpool. The pessary fits the operator's finger like a thimble and, carried through the vagina in this way, it is easily passed into the uterus. The convenience and usefulness of these thimble-pessaries both for this purpose and for introducing other substances, such as antiseptics, into the uterine cavity is obvious. The same firm prepare them with various ingredients. One containing iodoform has proved of particular value.

Coryzal Snuff.—Dr. Degoix recommends the following snuff, to be sniffed up the nostrils twice or thrice daily :—

℞ Acid. Boric	2 parts	Pulv. Fol. Belladon.	1 part
Pulv. Camphoræ	2 parts		

Messrs. Ferris & Co., of Bristol, send us a sample of this preparation, which has an undoubted effect in checking the congestion of the nasal mucous membrane, and relieving the catarrhal symptoms.

Constipation (Anti-) Tabloids.—Messrs. Burroughs, Wellcome & Co. send us some most elegant sugar-coated tabloids, small in size and very easily swallowed. They produce several formulæ of which the following appears to be a great favourite with the profession :—

℞ Aloin	gr. $\frac{1}{6}$	Strych. Mur.	gr. $\frac{1}{60}$
Ext. Bellad.	gr. $\frac{1}{8}$	Pulv. Ipecac.	gr. $\frac{1}{10}$

Coca Wine.—Messrs. Lorimer & Co. send us a sample of this wine as prepared in their laboratory. It compares very favourably with other samples that have come under our notice, and contains all the stimulating and tonic properties of the coca dissolved in a generous and palatable wine.

Cod Liver Oil and Hypophosphites.—The value of the hypophosphites of soda and potash in phthisis is becoming more steadily acknowledged as the *furore* for fancy cures has subsided. This emulsion of these salts with cod liver oil, sent us by R. Sumner & Co., of

Liverpool, is an excellent pharmaceutical preparation, well adapted for dispensing purposes, and sufficiently moderate in price to be serviceable in hospital and dispensary practice.

Chlorodyne Rub.—This we find to be of full strength, the active ingredients being dissolved in the menstruum instead of being suspended, as in the older forms. It requires no shaking, and the dose is constant. For dispensing purposes 4 drachms may be dissolved in 6 ounces of distilled water; this gives a perfectly clear mixture of a pleasing colour. Messrs. Mackey, Mackey & Co., of 1 and 2, Bouverie Street, are the manufacturers.

Cupri Phosph.—M. Luton ("Le Practicien," Jan. 16, 1888) considers that in phosphate of copper we have a specific for tuberculosis. It must be in a nascent state, and soluble in an alkaline medium. He adopts pills of the following formula :—

℞ Cupri Acet.	gr. $\frac{1}{7}$	Pulv. Rad. Glycyrrh.
Sodæ Phosph. xtal.	gr. $\frac{4}{5}$	Glycerin. āā. q.s.

Ft. pil. j.

Messrs. Ferris & Co., of Bristol, send us a sample of the pills made by them in accordance with this formula, and which corresponds in every respect with the object sought to be attained by the author. It is well worth a trial at the hands of the profession.

Effervescing Preparations.—Among some new effervescing preparations sent us by Messrs. Sumner & Co., of Liverpool, we notice one containing the hypophosphite of lime, 3 grains to 5j; another containing iron (5 grains to 5j) and arsenic (gr. $\frac{1}{24}$ to 5j).

This is a novel and agreeable way of administering some time honoured tonics, and there are many cases in which they would be greatly preferred by invalids. The preparation of iron and arsenic is practically free from a chalybeate taste, and is well taken by those with whom iron in any form disagrees.

Another preparation contains 4 grains each of antipyrin and salicylate of soda to the 5j. This is a useful and pleasant form of febrifuge. The preparations are made with all the pharmaceutical skill for which the firm are noted.

Euonymin.—Since the experiments of Prof. Rutherford placed euonymin in the front rank of cholagogues, its use would have been more general had more reliable preparations of the drug been available. We have tried a series of preparations produced by Messrs. Oppenheimer, and find that the euonymin is present in its active form, and the combinations are such as to meet the general requirements of patients in which a mild cholagogue remedy is indicated. Thus, in dyspepsia with slow digestion and functionally inactive liver,

liq. euonymin et pepsin co. is an effective remedy. For chronic constipation with functional inactivity of the liver *liq. euonymin et cascaræ sagradæ co.* is a most valuable preparation. In painful gastric affections, with hepatic derangement, *liq. euonymin et bismuthi co.* contains the naturally indicated remedies, and relieves pain while it removes the cause of the troubles.

Euonymin Cocoa.—That we all have patients who cannot get on without an occasional hepatic stimulant is a fact which we have to accept as a result of individual experience. In considering the best way of meeting this requirement, the euonymin cocoa, introduced by Messrs. Oppenheimer Bros. appears to offer a very fair solution of the difficulty. The taste of the medicament is thoroughly disguised, and the cocoa is wholesome and nutritious. It is a pleasant and effectual prescription, rendering the dinner pill or evening dose unnecessary: even with patients who declare that cocoa disagrees with them, this preparation may be used, because by improving the digestive powers it removes the difficulty of which they complain.

We think the euonymin cocoa is likely to become popular both with the medical profession and their patients.

Ferri Ethereal. (Tinct.)—(Bestucheff.)—This preparation of iron is largely used on the Continent, where it is known as "Bestucheff's Tincture." It is prepared with 1 part perchloride iron and 7 parts Hoffman's anodyne.

Dr. Wyss, of Geneva, speaks very highly of it in cases of Bright's disease. Five or ten drops in a glass of water were given to a large number of patients from three to six times daily, the result being that in more than half the cases the albumen entirely disappeared from the urine, and the œdema and other symptoms were also cured. Messrs. Ferris & Co., of Bristol, are the manufacturers.

Glabrucine Liquor.—This contains the active principle of the rhus glabra, an American remedy comparatively little known in this country. It is considered by the eclectic school to have a peculiarly tonic effect upon the mucous membrane, and to possess antiseptic properties. It has been used with success in gonorrhœa, gleet, leucorrhœa and other urinary affections. It is also valued as a tonic to the mucous membrane after attacks of diarrhœa and dysentery. On the same general ground it has been used for the treatment of aphthæ and for mercurial stomatitis. The late Dr. Lilienthal regarded it as an excellent remedy for occipital headache. It is a remedy well worthy of a trial at the hands of British practitioners. Messrs. Oppenheimer Bros., of 14, Worship street, are the manufacturers.

Glycerini c̄ Jalapæ (Injectio.)—This is a convenient preparation for injecting into the rectum for the removal of constipation. The action of the jalap is localized, but by reflex stimulation it causes the large intestine to discharge its contents. The action of the bowel effects a removal of the cause of stimulation and no unpleasant or irregular action of the intestine follows its use. Messrs. Hockin, Wilson & Co., are the manufacturers of this useful agent.

Gregory's Powder (Improved).—This preparation possesses many advantages over the ordinary Gregory's Powder. Being condensed and freed from inert matter, the dose is much smaller. It mixes easily with water, and is readily taken by those who refuse to take the ordinary Gregory's Powder, owing to its disagreeable taste. It is prepared by J. L. Bullock & Co., 3, Hanover Street, Hanover Square, London, W.

Guaiacum.—This is not a new drug, or even a new remedy, but its use as a laxative, especially in the gouty and rheumatic diathesis, is so little appreciated at the present time, that Dr. Wm. Murrell has done well to call attention to it. He prescribes it in the form of a confection of which Messrs. Ferrris & Co., of Bristol have sent us a sample: it is a very elegant preparation and not unpleasant to the taste. It should be prescribed as *Confectio Guaiaci (Ferris)* and will we believe, prove a very valuable addition to our resources.

Hæmoglobin.—The use of the characteristic constituent of the blood in place of iron as a remedy in chlorosis is steadily extending, but we need a better way of administering it than the syrup, as the odour is disagreeable to many of these patients who are apt to be fastidious. Messrs. Ferris & Co., of Bristol, recommend that it should be administered in pill form. They prepare some which contain $\dot{3}\frac{ss}{ss}$ grains of hæmoglobin which represents about $\frac{1}{20}$ grain of metallic iron in each pill. Six to twelve pills should be taken in the day.

Helanine and Culverine Co., (Liquor).—Under this name Messrs. Oppenheimer Bros., have introduced a remedy containing the active principle of collinsonia canadensis and leptandra virginica. There is some reason in this combination, because while the latter remedy has a well deserved reputation for the cure of venous congestion of the pelvic viscera, including hæmorrhoids, uterine and ovarian congestion, leptandra has an equal repute as a cholagogue, and particularly for congested conditions of the portal system. As it is fair to presume that both these conditions may co-exist in the same individual, and may be mutually dependent upon one another, this combination may serve to re-establish an efficient circulation in both, and by so doing

remove chronic troubles which have not yielded to ordinary remedies. Also at the other end of the digestive canal we get chronic relaxation and congestion of the pharynx, due to hepatic disorders, and in these we shall expect the combination to exercise very beneficial results. We think the *liquor helenine et culverine co.*, fills a gap in our therapeutic resources and will prove a valuable addition to them.

Hydriodic Acid (Syrup of).—This is a very efficient method of obtaining the effect of iodine in scrofulous, tuberculous and syphilitic patients. The syrup has a very pleasant taste and may be substituted with advantage for iodide of potassium, which it is difficult to prescribe in an agreeable form. It is made by Sumner & Co., Liverpool, whose cheap and effective substitute for iodide of potassium (liq. calcis iodinatæ) we noticed last year. The same firm send us a sample of **Sol. Potass Iodinatæ** which introduces a novel and very effective method for the external treatment of enlarged joints, scrofulous swellings, etc. When combined with olive oil it forms a soapy liniment strongly charged with colourless iodine, and the happy effect of directing the swelling to be rubbed with this until the liniment disappears under the hand, can be well understood. These preparations are a distinct gain to the profession.

Hydrobromic Acid.—Messrs. Sumner & Co., have introduced under the name of "*Syrup Tussis Hydrobrom.*" a mixture which serves as an excellent sedative in coughs affecting the larynx. It has not the sickly taste of most cough syrups.

Iodine. A new and improved method of using iodine as an external application is afforded by the *Liquor Iodi Alt.* (Battley), which contains 20 grains of iodine to the ounce, but which has no staining effect upon the skin. It does not irritate the skin, but is quickly absorbed, so that the beneficial effects of iodine are readily conveyed to the blood in the most direct and certain manner. The iodized oil (Lorimer & Co.) is a very similar preparation, and one which will find many practical uses both in medical and surgical cases.

Ipecacuanha (*Sine Emetine*).—The favourable results obtained by Surgeon Major G. A. Harris in the treatment of dysentery by full doses of ipecacuanha deprived of its emetine have induced Messrs. Ferris & Co., of Bristol, to prepare the drug in this form. It seems probable that the emetine is not necessary to the cure of dysentery by this drug, and the patient is saved from much physical discomfort and depression by its removal.

Kava Kava.—Under the name of "Kava Kava Co. Liq." Messrs. Sumner & Co. have prepared a fluid extract of kava kava, hydrastis,

uva ursi, etc., for the treatment of gonorrhœa, leucorrhœa, gleet, and affections of the urinary organs, a valuable substitute for copaibæ compounds, being very much more agreeable to the palate, and not deranging the stomach, but, on the contrary, being an admirable tonic, increasing the appetite. Its action first increases the discharge, then rapidly causes its cessation. The dose is ʒss to ʒj in water three or four times daily.

Kola Wine.—As a means of stimulating and soothing the nervous system, when exhausted, kola wine offers many advantages, because instead of merely acting as a whip to the flagging powers, it sustains strength first by enabling the tissues to throw off their waste products, which is shown by the increased excretion of carbonic acid gas during its administration, and also because it stimulates the trophic centres to repair the waste of the organism. Its function is to enable the vital powers of a weak person to stand physical strain for a certain length of time which would ordinarily require a very robust organization to endure without exhaustion. Compared with alcohol its stimulation is maintained instead of being transient. The primary effect is that of the alcohol contained in the wine, the secondary that of the kola which is well known as an antidote to the after effects of alcohol, while it gives rise to a sense of exhilaration as a result of the caffeine it contains. For patients with weakness of the muscular wall of the heart, kola wine may be considered as a valuable medicine, while for insomnia caused by nervous exhaustion it acts in some cases better than any hypnotic which could be selected.

The Kola Wine of Van Hargan may be obtained from Messrs. Keene and Ashwell, 74, New Bond Street, London, W.

Lime Fruit Jujubes.—As prepared by Messrs. Rowntree & Co., of York, these jujubes are composed of a large amount of pure lime juice, and they have proved very advantageous to us in treating patients with relaxed or irritable throats, and we find that in conditions of chronic cough they assist the expectoration.

Liquor Santal c̄ Copaibæ Cubebæ et Buchu.—This is an elegant preparation, perfectly miscible with water, and which should form a useful remedy in the treatment of gonorrhœa and catarrhal conditions of the bladder. It is a great convenience to have such a preparation at hand for dispensing purposes, and when prescribing these remedies it is an advantage to be sure that they will be put up in a proper manner. Messrs. Mackey, Mackey & Co., of Bouverie Street are the manufacturers.

Liquors, Concentrated. Battley's *liquor opii sedativus* is a com-

mon word in the practitioner's vocabulary. It has gained its reputation by its intrinsic value, as a remedy which contains all that is sedative and anodyne in opium, without its resinous constituents which are, therapeutically speaking, impurities. We have been interested in examining a number of other liquors prepared by the same firm. *Liquor belladonnæ* is an extremely powerful preparation of this potent drug. One ounce is equal to 10 drachms and 40 grains of the extract. It retains all the properties of the fresh plant, and is particularly to be commended for external application. *Liquor secalis cornuti* contains a drachm of the powder to each drachm of the liquor; it is therefore a preparation which can be relied upon, and there is no drug probably in which absolute reliability is of greater importance. *Liquor taraxaci* is the pure juice of the root, freed from its albumen, and the solution is concentrated from a specific gravity of 1000 to a specific gravity of 70. *Liquor cinchonæ cordifoliæ* contains in one drachm the medicinal properties of one ounce of the finest bark. It is for many reasons a better tonic and anti-remittent than quinine. Messrs. Battley & Watts, of Cripplegate, E.C., deserve every commendation for the care and skill displayed in producing these preparations.

Malt (Extracts of).—Messrs. Sumner & Co., of Liverpool have added to the number of these preparations, the great point of their production being that while it contains all the activity of the treacle-like forms of extract with which we are familiar, it is perfectly fluid and is readily miscible with water. It is well adapted for dispensing purposes, and they have sent us samples of some of the combinations they have made. The *ext. malti liq. c. hypophosphitæ* is a combination of the hypophosphite of lime, soda, iron, manganese, quinine, and strychnia, and is practically the same as syrup of the hypophosphites, but ext. of malt takes the place of the sugar, thus greatly adding to the efficiency and digestibility of the preparation. Two other preparations likely to be of great value in the treatment of dyspepsia and wasting disorders are *ext. malti liq. et pepsine c. pancreatine*, and a similar preparation in which papain takes the place of the pepsine. It will be difficult to find a better form in which to give pepsine or pancreatine in atonic conditions of the stomach.

We have received from the Maltine Manufacturing Co. samples of their various combinations of **Malt.** Maltine with pepsine and pancreatine, Maltine with cascara sagrada, and maltine with lime, are so well known and valued by the profession, that any description of them is unnecessary. The same may be said of the Kepler extract of malt and cod liver oil, which is as valuable to-day in the treatment of consumption as it was when it was first introduced.

Malt Pastiles.—The diastatic properties of the malt has been well preserved in the pastiles submitted to us by Messrs. Rowntree & Co., of York. They form an agreeable and beneficial addition to the dietary of delicate children, and they may be given with advantage in any case where it is desirable to aid the nutrition, and increase the digestive powers.

Manganese.—The use of manganese as a substitute for iron in the treatment of anæmia and chlorosis has not become very general, although this agent has secured some favour in the treatment of amenorrhœa in anæmic patients. The reason does not appear to us to lie in its lack of efficacy but in the fact that the inorganic forms of manganese which have been employed are very unsuitable for therapeutic purposes. Dr. Gude has discovered a process by which manganese can be produced as an organic compound, and his preparation which is introduced under the name of *pepto-mangan* (*Gude*) deserves the serious attention of the profession. It is formed by the combination of a peptonate of manganese with a peptonate of iron, and although the good results which undoubtedly follow the use of the preparation may be ascribed to the iron it contains, and the claims of manganese as a substitute may not be forwarded by it from a strictly scientific standpoint, yet as a practical remedy in the treatment of anæmia it possesses undoubted advantages. It is of neutral reaction and may be given with milk ; it does not disorder the stomach or cause constipation. The German medical press has lately contained many satisfactory articles as to its value, and it is well worthy of a trial in this country. K. Hebbeler, 149, Houndsditch, London, S.E., is the British agent.

Under the name of **Liq. Mangano Ferri Peptonati** we have received from Messrs. Hockin, Wilson & Co., another preparation which contains the peptonates of iron and manganese. It is particularly suitable for those cases of anæmia and chlorosis where an ordinary iron salt would not be well borne ; and where the condition is associated with amenorrhœa, it would exercise a more tonic effect upon the uterus than any of the ordinary ferruginous preparations. Now that manganese can be obtained in a form better suitable for internal administration than formerly, we may reasonably expect it to take a higher place among our therapeutic resources.

Ointments (Portable).—Messrs. Sumner & Co. send us a neat cardboard case containing a series of frequently used ointments in collapsible tubes. The advantage of this form of dispensing ointments is obvious, and it is particularly convenient to a practitioner to be enabled

to put half a dozen different ointments into his surgical bag without fear that they will do injury, and without the occupation of too much space. We notice that the price is very moderate, and they are well adapted for the use of those practitioners who dispense their own medicines, who can have their own formulæ prepared by the firm.

Ointment (Dr. Unna's).—for *Lichen Ruber*. This is a combination of carbolic acid and corrosive sublimate with diachylon as a base. It is prepared from Dr. Unna's formula by Messrs. Ferris & Co.

Ointment Sedative.—Under the name of duroleum morphinæ, Messrs. Ferris & Co. prepare a combination of morphine and chloroform with a basis of duroleum. It is similar to the ointment recommended by Dr. W. B. Richardson for the relief of pain in external malignant disease, and it would be impossible to find a better preparation for this purpose. It is useful also in painful affections of the joints. In either case it should be spread thinly over a piece of soft linen and applied to the part.

Opium.—Under the name of liquor opiatus or anodyne tincture, Messrs. Mackey, Mackey & Co. supply a preparation of opium which contains the alkaloids without the resins and waxy substances. Its use is less likely to give rise to headache and constipation than the Pharmacopœia tincture, the sedative and anodyne qualities of which, have this disadvantage.

Papain.—We noticed this vegetable digestive agent in our last issue. Messrs. Ferris & Co., of Bristol, send us an *elixir papain co.*, which is nicely made, and seems well suited for the treatment of dyspepsia.

Pepsalia (Salt).—This valuable pharmaceutical invention, by which the salt used with food is made to contain the agent for digesting it, has attained a wide and well-deserved popularity. The invalid who suffers from atonic dyspepsia, and requires the aid of pepsine to facilitate the act of digestion, has only to use the Pepsalia Salt instead of ordinary table salt to obtain the digestive ferment, in the form most suitable to produce efficacious results. Experiments with the sample sent to us by Messrs. G. & G. Stern, of Gray's Inn Road, London, W.C., show that the preparation contains all the active elements necessary to produce favourable results in such cases.

Pepsine (Acid Glycerine of).—This preparation contains pepsine dissolved in glycerine. It is an acid preparation of an agreeable taste, and is compatible with most medicinal substances, with which acids are compatible. It is therefore very convenient for dispensing purposes. It is made by J. L. Bullock & Co., of 3, Hanover Street, W.,

who are also the manufacturers of an exceptionally pure preparation of Pepsine in the dry form—"Pepsine Porci (Bullock)."

Pepsin et Euonymin (Glycerol of).—Contains pepsin gr. ij, euonymin gr. j to 3j. Dose, 3j to 3ij. A reliable preparation in cases where indigestion is accompanied with torpid liver, prepared by Mackey, Mackey & Co., 1 and 2 Bouverie Street, E.C.

Pills for Incontinence of Urine.—The following is a formula manufactured by Messrs. Ferris & Co., and likely to prove serviceable in those cases where the disorder is due to loss of power in the sphincter.

℞	Ext. Nucis Vomic.	$\frac{1}{6}$ gr.	Pulv. Ligni Quassiæ	2 grs
	Ferri Oxydul. Oxydat.	2 grs	Syr. Absynth.	q. s. ut ft. pil. j

From 1 to 3 pills to be taken daily.

Podophyllin.—The Glycerol of podophyllin sent by Mackey, Mackey & Co., contains gr. $\frac{1}{4}$ of the resin to 3j. It is not precipitated in admixture with water. Messrs. Hockin, Wilson & Co. also send samples of their preparation of podophyllin alone, and in combination with strychnia and belladonna which are also miscible with water. Their convenience for dispensing purposes is obvious, and they are much appreciated.

Pulv. Glycyrrhizæ Co., (Tabellæ).—These are compressed 10 grain pellets of this popular laxative, prepared by Messrs. Sumner & Co. When masticated their taste is not unpleasant, and prescribed or dispensed in this way they can be used in divided doses, one after each meal, to meet the necessities of those who suffer from chronic constipation.

Soaps, Superfatted.—*(Eichoff).*—These soaps are prepared under the direction of Dr. Eichoff, Senior Physician to the Hospital for Skin Diseases, of Elberfield (Germany), and are intended for the treatment of various skin diseases by inunction of soap instead of by the use of salves and ointments. They are superfatted with 3 per cent. of olive oil and 2 per cent. of lanoline, and certain various medicinal agents used in the modern treatment of skin disease in definite proportions, each being indicated in a particular form of skin disease. The list of soaps, with their clinical indications, is too long for insertion, but it may be obtained from Messrs. Khron Bros. & Co., Billiter Buildings, Billiter Street, London, E.C., the agents in this country, and will doubtless prove useful to practitioners, as it indicates the appropriate remedy in many troublesome forms of skin disease, while the soap affords an effective and convenient method of employing it.

Messrs. R. Sumner & Co., of Liverpool, also send us samples of

superfatted soaps, both for toilet purposes and the treatment of various skin diseases. The sulphur thymol and carbolic soaps are all very much superior to those made by the older methods. The firm undertake to prepare these superfatted soaps in accordance with any formula which may be desired by those engaged in the treatment of skin disease.

Messrs. Burroughs, Wellcome & Co. also prepare superfatted soaps which contain lanoline. The Lanoline-ichthyol soap (10 per cent.) is valuable in the treatment of chronic scaly skin disease, scabies, seborrhœa, eczema, acne, and psoriasis, as proved by Schwengers, ("Monatshefte f. prak. Derm.," Aug. 15, 1890). Ichthyol (10 per cent.) prevented the growths of the favus and ringworm fungi. It is usual in employing this soap to thoroughly lather the part and allow it to dry on. The application is cleaner and is more agreeable than ointments to many patients. Lanoline eucalyptus soap, and lanoline pinol soap, are useful antiseptic soaps: they do not cause redness or dryness of the skin, and are very cleansing.

Suppositories, Nutrient.—The Liquor Carnis Co. have rendered their valuable preparation of meat serviceable for rectal alimentation, by the manufacture of small nutrient suppositories that are well calculated to serve the purpose for which they are intended, being readily soluble and non-irritating. The value of their contents as a nutriment is beyond question.

NEW INVENTIONS.

Absorbent Wool (The Climax).—The climax absorbent wool bears about the same relation to ordinary absorbent wools that silk does to cotton. Its texture is not unlike unspun silk, and its absorptive power is truly remarkable, not only because it takes up something like fourteen times its bulk of fluid, but because it does not appear to become sodden by the absorption. The Liverpool Lint Co., who have produced this wool, may be sure that it will be extensively employed as it becomes known to the profession.

Apparatus for Clinical Detection of Micro-Organisms in Blood, Sputa, and Urine.—At a time when it is almost imperative upon the physician who wishes to sustain his reputation to be able to identify micro-organisms in the blood, sputa, or urine, an immense help to such researches has been afforded by Messrs. Ferris & Co., of Bristol, by producing a portable case containing all the apparatus and reagents required (*Fig.* 55). By following the directions given with the case, such examinations are hardly more difficult than the ordinary

qualitative analysis of urine, while they are far more interesting. The case is arranged by Dr. J. Michell Clarke, and is particularly complete; no detail of the observations appears to be unprovided for. The various staining reagents, test-pipes, watch-glasses, spirit lamp, and microscopic slide and cover glasses are all in their places ready for use, so that the investigation need occupy the least possible loss of time. This is the only case of the kind with which we are acquainted, and it will be difficult to improve upon it. Medical men who find relaxation in microscopical studies will particularly appreciate the means it affords of following out in reference to the cases which come under their own notice those researches which occupy such an important place in modern literature.

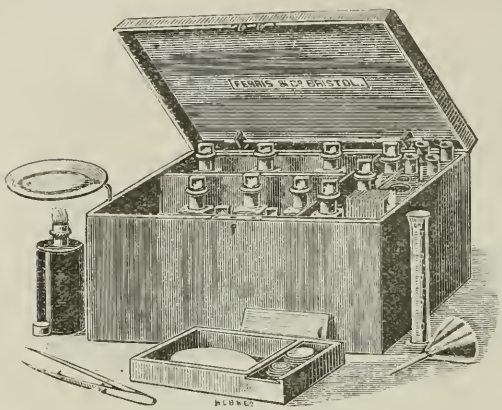

Fig. 55.

Artery Forceps and Needle Holder (Combined).—Very few pocket surgical cases contain a needle-holder, although it is an instrument the absence of which may be a source of trouble in a case of emergency. Messrs. Sumner & Co. have introduced an artery forceps, of the most modern construction and excellent workmanship, the handle of which forms a perfect needle-holder. It is one of those combinations to which the mechanism of the artery forceps naturally lends itself. The levers of the forceps, instead of terminating at the axis, are slightly prolonged beyond it, so that when closed they form an efficient clamp, which will grasp the needle firmly. The combined instruments occupy no more space than an ordinary artery forceps, and we would recommend it in preference to any other form of artery forceps manufactured.

Aural Vaporoles.—These are delicate glass globes containing eucalyptus or other antiseptic, which are enclosed in cotton-wool and a silken covering (*Fig.* 56). In use they are crushed between the fingers and inserted into the ear to form an antiseptic plug, and are recommended

by Dr. MacNaughton Jones in conditions attended by discharge from the ear. They are made by Burroughs, Wellcome & Co. The great elegance of their manufacture reflects credit upon the firm who have carried out the eminent specialist's idea ; but we must confess that the idea itself does not recommend itself to us. We have a prejudice against inserting glass into an inflamed ear, however well protected it may be, and we are not impressed by the notion that a plug which would prevent the discharge from escaping is always the best thing to do in such cases. In the hands of their inventor they may be safe enough, but we should be sorry to see their use adopted as a general principle in the treatment of purulent discharges from the ear.

Fig. 56.

The vaporoles of similar manufacture intended for adding the proper quantity of pinol, eucalyptol, etc., to hot water for purposes of inhalation, are as convenient as they are elegant, and can be strongly recommended.

Bronchial Inhaler.—Messrs. Hockin, Wilson & Co. have sent us an appliance for the purpose of giving inhalations in cases of bronchitis, which has the merits of being simple in construction, inexpensive and practical. The glass tube by which the steam is delivered is of large calibre, flattened at the mouthpiece, and this is an improvement on some we have used, where actual effort is required to draw the steam into the air-passage. It is an appliance for the inhalation of hot vapour, which the practitioner will be safe in recommending.

Cabinet for Medical Dispensing.—This cabinet when closed has the appearance of an elegant book case, and forms a handsome piece of furniture (*Fig.* 57). When opened, the upper portion lays bare, in a convenient position for dispensing, about 4 doz. 20 oz. bottles, with glass stoppers, 5 doz. 8 oz. ditto, nine 1 lb. ointment jars, and eleven ½ lb. ditto (these are labelled as desired by the purchaser). The centre portion has a folding shutter, the upper part of which is pushed back into the cabinet and the lower falls forward, forming a dispensing-counter. In this division there are : (1,) A compartment for an upright dispensing scales, also racks for spirit lamp, test tubes, and urinometer ; (2,) A copper water-tank of over a gallon capacity (for distilled water), with brass tap—the tank is arranged so that it can be easily filled and cleansed ; (3,) A compartment to hold measure glasses and pestle and mortar ; (4,) Drawers for corks, pill-boxes, and ointment-boxes ; (5,) A falling door which forms a writing desk, behind which is inkstand, etc., also drawers for labels and divisions

for wrapping-paper. The base of the cabinet has closing doors, which when opened discovers: (1,) A long drawer for splints, etc.; (2,) Two drawers, lined with green baize, for instruments; (3,) A suitable compartment for lint, cotton wool, tow, etc.; (4,) Several divisions for all kinds of dispensing bottles. The cabinet is manufactured by Messrs. R. Sumner & Co., Liverpool, and meets every possible requirement, at a cost which must be considered most moderate.

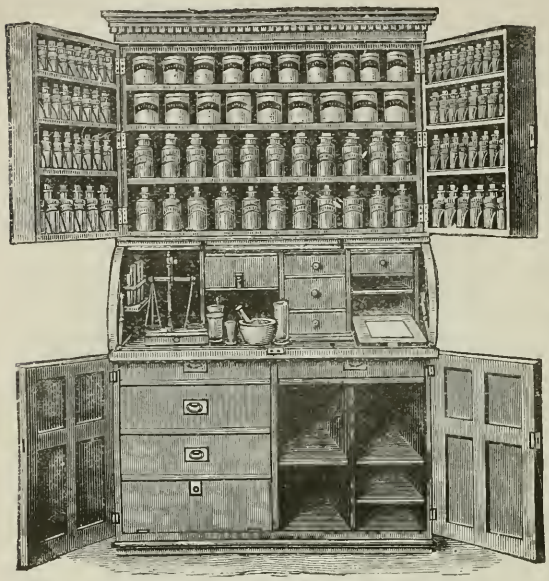

Fig. 57.

Catheter (Belfast Linen).—We mentioned these catheters some years ago and since then we have had many opportunities of testing their practical efficiency. They appear to us to possess precisely that degree of flexibility which we require in a flexible catheter, without being too limp. They do not seem to be affected by change of temperature, and may be regarded as practically unbreakable. We have found them of great practical use, and can heartily commend them. They are made by Messrs. Hockin, Wilson & Co.

Catheters (Combination).—Messrs. R. Sumner & Co. have made an arrangement by which a male, female, and child's catheter can be carried in an ordinary pocket surgical case. We remember having answered an urgent summons three miles from town and found on arrival that our visit was useless because we were not provided with a male catheter. The advantage of having one in the surgical case is unquestionable, and the plan adopted by Messrs. Sumner is both simple and practicable. The stem of the female catheter unscrews

and then fits on to the stem of the male or child's catheter, so that in either case we have a full-sized instrument, shaped to meet the purpose required. It is a combination of distinct value to the practitioner.

Chloroform Inhalers.—In our last edition we spoke of the safety, convenience, and economy which results from the use of Messrs. Krohne & Sesemann's modification of Junker's inhaler. Further trial has confirmed that opinion ; but we think that the face-piece should be furnished with an india-rubber cushion similar to those employed in the administration of nitrous oxide gas, so that air can be excluded from entering at the side, if necessary. We found that anæsthesia was rapid in those cases where the mouthpiece fitted the contour of the face, but very slow when it did not. The firm have produced a new rubber attachment to the face-piece which meets every requirement, but in their letter to us respecting it they raise certain points which appear worthy of attention. They say, "The india-rubber cushion is especially of service for young children and with people with very shallow breathing, as the shallowest respiration will be seen by the movement of the indicator. For people with strong breathing the face-piece should never be held firmly against the face, so that the inspiration should not be in the least impeded, for the safety in the administration of chloroform depends entirely on the respiration. If sufficient air is permitted to enter the lungs to enable them to carry out properly the function of respiration, the patient's breathing will be regular, and there is not a shadow of danger; but as soon as the breathing becomes irregular, there exists danger, because such breathing shows that not sufficient air enters the lungs for the proper aëration of the blood. The danger is in proportion to the excess of vapour given, and, consequently, to the less amount of air, the place of which is taken by the vapour. Every condition of danger is the result of an overdose : whether it kills in the first minute, in the middle of an operation, at the finish, or in a few hours or days after the operation, all is caused, not by the quantity of chloroform vapour inhaled and taken up in the system, but by withholding or by not allowing the patient the necessary quantity of air to enable the lungs to carry out the proper function of respiration." Messrs. Krohne & Sesemann have given very great attention to the subject of chloroform administration, and we recognize that their efforts are prompted by a desire to remove the risks which ordinarily accompany the administration of anæsthetics.

Chloroform Mask.—So many practitioners prefer to administer chloroform upon a piece of lint or towel that they will welcome a little

appliance made by Sumner & Co., of Liverpool, which will retain any fabric in the proper position for covering the mouth and nose without contact with the skin. It folds up perfectly flat, so that it occupies but little space. It is durably and very cleverly made, and is sold at a very small price.

Cocaine Spray.—The ordinary spray-producers are too large for the use of cocaine solutions, which are apt to deteriorate. A spray specially produced by Messrs. Sumner & Co. for the use of cocaine, holds about 2 drachms, which may be used to the last drop in whatever position the instrument is held. The fittings are made of vulcanite, and the delivery tube is long, so that it is equally available for the nose and throat. It is sold for three shillings and sixpence, and supplies a little appliance of which many a practitioner must have felt the need.

Compressed Cotton Wool.—This is a practical addition to the comfort and convenience of physicians and surgeons which needs only mention to be appreciated. We have a roll, not unlike a bandage, of some material one eighth of an inch in thickness, but as it is unrolled it proves to be cotton-wool, which springs by its own elasticity into a thickness of over one inch. Between each layer of wool is a piece of pink tissue-paper, which prevents matting. Thus the difficulty of carrying a sufficiency of cotton-wool in the surgical bag, and a great deal of the waste ordinarily attending the use of this material, is overcome. This is one of the productions of the Liverpool Lint Co., who are always to the front with practical improvements. All we want now from them is a neat tin box capable of holding a somewhat smaller roll of cotton-wool, provided with a slit through which the cotton-wool can be drawn as required. The idea is not our own, because they have issued a similar useful appliance in connection with their protective lint, but the same principle adapted to their compressed cotton-wool would be even more useful.

Dressing (First Aid).—This is a simple absorbent antiseptic pad, a bandage, and a surgical safety-pin. A very simple affair, but if a few of them are kept at hand at points where accidents are likely to have to be dealt with, an immense amount of trouble might be saved, and the dangerous consequences of "make-shift" dressings avoided. Those who hold official appointments should see that such provision is made, and the specimen we have before us, which is the production of the Liverpool Lint Co., will answer the purpose in a very practical manner.

Dressing Forceps (Aseptic).—This is another departure in aseptic instruments, and in a direction where cleanliness is most needed. It

is a dressing forceps of the most approved kind which will separate into two parts at the joint, so that perfect cleansing is rendered practicable after use. It is produced by Messrs. R. Sumner & Co., of Liverpool.

Dry Oxide of Copper Elements, Coxeter's New.—With the caution necessary in speaking of new methods of producing electricity, we are inclined to believe that the new form of cell recently introduced by Messrs. Coxeter & Son will effect an important revolution in the medical batteries of the future (*Fig.* 58). We shall certainly advise medical men not to purchase a battery fitted with the older make of cell (Leclanché, bichromate, etc.) until they have observed the result of further experience with these new dry elements. The cell is supplied either flat (book shape) or in the form of cylindrical tubes. It is perfectly dry, and may be carried in the pocket or packed up with one's clothes in an ordinary travelling box without the least fear of accident. They are lighter than any other cells in use, and this, taken in conjunction with the fact that they are unbreakable and are free from the troubles of "filling" and "spilling," constitutes their special recommendation. But there is another point which has struck us particularly, and that is the ease with which any number of cells can be connected up or disconnected, so that used-up cells can be replaced by the physician himself without sending the battery to the electrician. This is of especial importance to country practitioners.

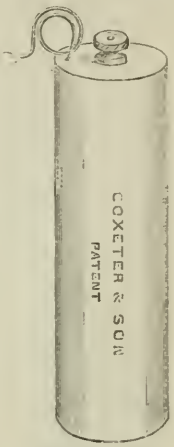

Fig. 58.

The manufacturers claim that they will last far longer than any other cells without exhaustion. This is a fact which we have not been able to determine for ourselves, although we find their activity has been fully maintained during the time we have employed them, and we find that they bear "short circuiting" better than any other cells we have tried. We regard it as a cheap and efficient cell, with many advantages over those at present in use, and which will remove most of the troubles which those who employ electricity extensively in their practice are too well acquainted with.

Electrodes, Adhesive.—We recommend every practitioner who uses electricity to obtain some of these from Messrs. Coxeter & Son, with the perfect certainty that they will prove one of the most satisfactory electrical investments he has ever made. It is merely necessary to moisten the surface of the electrode and it will adhere to any part of the body to which the current is to be applied.

They save time and labour, and are much more comfortable to the patient than any others we have employed. They are cleanly in use, and very inexpensive.

Hartmann's Gonorrhœa Bags.—These at once commend themselves to approval. A muslin bag, the lower part of which is lined with wood wool and rendered antiseptic by corrosive sublimate, is placed over the affected organ and secured round the waist by two tapes. It absorbs all discharges, and is cool and comfortable to wear, while the small price at which they are sold places them within the reach of even the poorest patients. They have been employed at the Lock Hospital, and are warmly approved by its surgeons. They are produced by the Sanitary Wood Wool Co., 26, Thavies Inn, E.C., whose various dressings in which wood wool is utilized have been previously noticed in our pages.

Holland's Intra-Uterine Irrigation Cannulæ.—Messss. Mayer & Metzler have produced a series of cannulæ for the irrigation of the uterus (*Fig.* 59). They are made of metal, and of sufficient length to overcome any obstacle to their introduction, and may, if necessary, be employed as a sound prior to the injection being given. The cannulæ consist of double tubes, the outer having longitudinal slits, the inner grooves corresponding with them, and they allow for the ready access and egress of the injecting fluid. They are so constructed

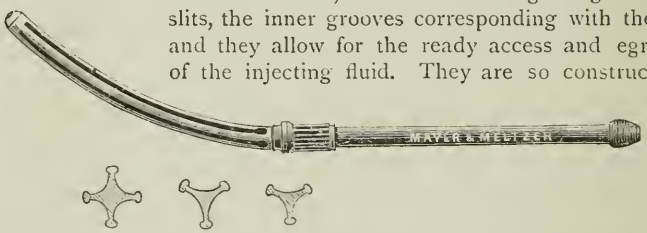

Fig. 59.

as to be easily taken apart for the very necessary cleansing which such instruments must undergo prior to their introduction. We believe that they will meet the requirements both of the gynæcologist and the obstetrician in every respect.

Hypodermic Case (Ferris).—This contains a neat little hypodermic syringe, with two needles (*Fig.* 60). Its chief advantage is that the piston rod is made of glass and not liable to become corroded by the solutions used for injection. It is so constructed that it can be readily cleaned and rendered perfectly aseptic. It has a capacity of 10 minims, the marks

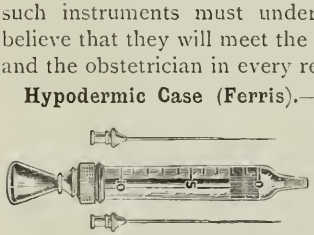

Fig. 60.

upon the body of the instrument being unusually clear and distinct. The case is leather covered and durable. The cost is only 5s. 6d., and we can recommend it as both cheap and serviceable. Ferris & Co., Bristol.

Improved Irrigator Regulator. — This is a particularly valuable surgical appliance, which was invented by Mr. Clinton Dent, of St. George's Hospital, and is manufactured by C. Wright & Co., of 108, New Bond Street. It consists of a conveniently shaped ebony handle, A, (*Fig.* 61), through which a length of india-rubber tubing passes. A length of 8 or 10 feet of tubing, attached to the glass-elbowed tube, E, connects the handle with a cistern irrigator. Simple pressure on the thumb-lever, B, regulates the flow of solution used, and on removal of pressure the flow is automatically checked by the india-rubber bands. The handle is provided with a conical glass nozzle, C, for washing out cavities, etc., and a glass rose-head, D, which is connected to it by a short piece of rubber tubing; the nozzles and rose-heads are made in white and ruby coloured glass, one being used in dealing with abscess cavities, whilst the others are used for ordinary wounds.

Mr. Dent uses the appliance to irrigate abscess cavities, and during operations a stream of hot antiseptic fluid is kept constantly flowing over the wounds, so that the use of sponges become unnecessary. The temperature used is 102°F, which serves to keep the wound warm instead of its becoming chilled as under the use of the "spray." The convenience and practicability of this method are worthy of serious attention, and it naturally much facilitates an operation when the blood is removed without for a moment interfering with the vision of the operator.

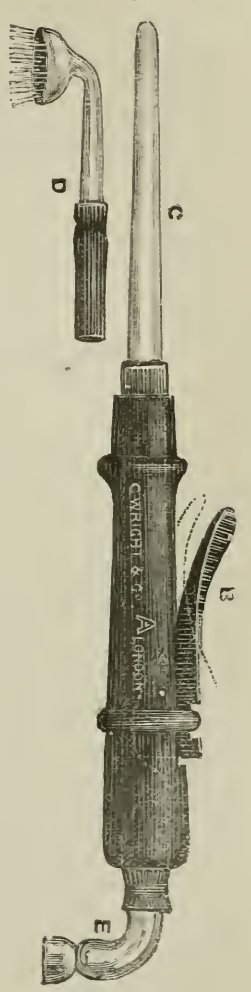

Fig. 61.

Inhaler (Hot Air).—The late Sir Morell Mackenzie designed an apparatus for the inhalation of hot air or dry medicated vapour, which

is manufactured by Burroughs, Wellcome & Co. We have not had an opportunity of testing its practical utility, but there are conditions of the throat in which an appliance of this kind should prove useful.

Irrigator (Pocket).—Under this name Messrs. R. Sumner & Co. have introduced a syphon douche for the irrigation of wounds. It is very compact, and can be carried in the pocket or surgical bag. At one extremity it has a cork which will fit any bottle which may be at hand, so that a perfect appliance is provided for any application requiring the use of a douche at the bedside of a private patient. It costs only 4s., and it may be considered as a most practical addition to the resources of private practitioners.

Nose and Ear Speculum, with Eye-lid Retractor.—This is a combination intended to meet the needs of practitioners who require to carry these instruments on their visiting rounds. The base is a spring made after the fashion of a pair of "sugar-tongs," into which the blades of the nasal and aural speculæ, and the parts of the eyelid retractor, may be fitted as required. The eyelid retractor may be regarded as a fairly perfect instrument; the nasal speculum is sufficiently useful, but the ear speculum, which would be likely to be most often required is altogether inefficient. We doubt whether the seven pieces of which the appliance consists are much more portable than the ordinary instruments, and on the whole we see little to commend in the invention, which Messrs. C. Wright & Co. have carried out in the best possible manner.

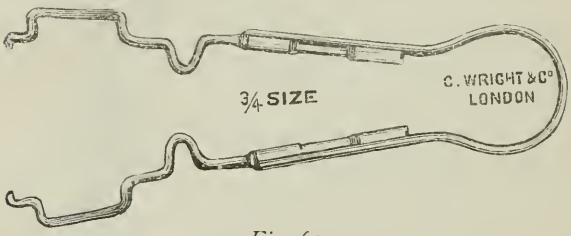

Fig. 62.

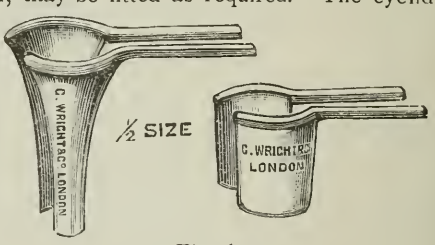

Fig. 63.

Ointment Introducers.—Dr. Ward Cousins has invented a very simple appliance for introducing ointments into the rectum, which is manufactured by Messrs. Burroughs, Wellcome & Co. It is made of

vulcanite, and its form will be understood by reference to the illustration (*Fig.* 64).

The cylinder contains sufficient ointment for a single application, and is refilled by simply unscrewing the stem and inserting a fresh supply by means of a spatula. It is propelled into the rectum by the action of the finger pressing upon a piston which traverses the cylinder. It will be found an efficient mode of applying various ointments within the rectum in cases of piles, fissure, and other such troubles.

Fig. 64.

Platinum Anti-Corset.—We have given especial attention to this sample (*Fig.* 65), because it appears to meet all the objections which have been raised to the ordinary form of corset.

The great obstacle in the way of reform is the difficulty of combining the principles of hygiene with the æsthetic demands of the ladies themselves. In this case the ladies we asked to assist us in expressing an opinion are unanimous in their approval, because it not only added to their comfort, but improved the figure. The invention consists practically of a "bodice," fitted with metal "steels," which are easily removable. There is no piece of steel down the front, as in the ordinary corset, and therefore one of the greatest dangers is removed. It buttons at the neck like an ordinary bodice, and is provided at its lower part with buttons to which the skirts are intended to be attached. Thus their weight is borne largely by the shoulders instead of the hips, a reform which must be regarded as of the greatest importance. The "bust" being supported from the shoulders, instead of being pushed up as in the ordinary corset, is kept firm and in its proper place, a very great point with ladies who are inclined to *embonpoint*. Another feature is that the anti-corset can be sent to the laundry as frequently as any other under-garment, the steels being removable and replaceable without the necessity of either ripping or sewing, in less time than would be occupied in buttoning or unbuttoning a glove—a lady's glove, of course. Herts, Son & Co., Limited, Ridgmount Street, London, W.C., are the manufacturers.

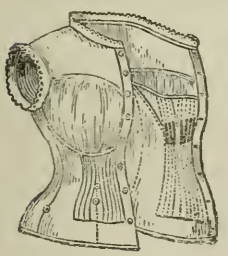

Fig. 65.

Pocket Surgical Cases (Aseptic).—The peculiarity of "pocket" surgical cases is the inconvenience of carrying them in the pocket. To obviate this, miniature cases have been produced in which the instruments are too small to be of much practical utility. Messrs. Ferris & Co. have sent us two surgical cases which are open to neither of these objections. The first is a complete case for minor surgical operations, which is half an inch in thickness, one and three-quarter inches in breadth, and four inches in length. Therefore, as regards portability, it is open to no possible objection. The case is made of metal, and contains a series of instruments not only of full size, but on the whole, longer and better mounted than is usual with instruments supplied to pocket cases. This is managed by the use of a common handle for the knives and exploring instruments. The handle is made entirely of metal, and is of very ingenious construction, because it can be instantly separated into two flat pieces of metal, which can be cleaned or washed as easily as ordinary metal spatulæ; but when put together they form a long handle of exceptional rigidity (*Fig* 66).

Fig. 66.

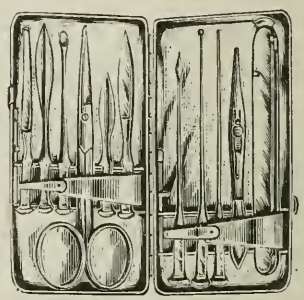

Fig. 67.

The probe, grooved exploring needle, and surgical needle are quite long enough, and so made that they can be used without the handle or with it. This removes one of the inconveniences which would attend the use of the common handle when two instruments may require to be used in conjunction. In addition to these instruments there are a good artery forceps, scissors, four different forms of surgical knives, spatula, and sharp scoop. The only instrument needed to give it completeness is a "director," which we advise the makers to add.

The main idea in introducing this case, and the following, is to make provision for the absolute cleanliness of pocket surgical instruments. There is no instrument or part of the case which cannot be soaked in an antiseptic solution without injury, and thus instruments may be kept in an aseptic condition quite impossible under the older methods.

The second case (*Fig.* 68) is intended only for surgical knives, and

contains half a dozen of various shapes, with a common handle. This case is only a quarter of an inch in thickness, its other dimensions being the same as *Fig.* 67. Containing, as it does, six really serviceable surgical instruments, it would be impossible to imagine anything more neat and compact.

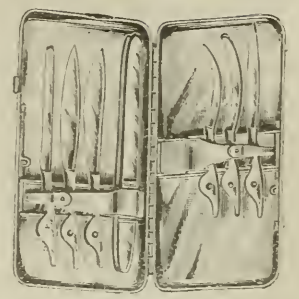

Fig. 68.

The construction of the handle differs from that in the before-mentioned case.

The mode in which it can be instantly taken to pieces and refitted is shown in the sketch (*Fig.* 69).

The makers deserve the thanks of the profession for placing at their disposal two surgical cases which are at once portable, efficient and more capable of being maintained thoroughly aseptic than any which have yet come under our notice.

Fig. 69.

Portable Operating Table.—This is a very practical appliance, well adapted for operation in private house, or for fitting up when required in the consulting room. It takes but a minute to place it in position, and it is then a very rigid and substantial table. There is a back which can be inclined at any angle, and two supports for the feet, which are adapted for the operation of lateral Lithotomy or gynæcological purposes. It is well made and inexpensive, and is well adapted for the purposes it is intended to serve. It is manufactured by Mr. T. McIlroy, of 80, Hampstead Road, London, whose Invalid Bedsteads have long been appreciated by the profession.

Steam Sterilizer for Surgical Instruments.—This appliance, by which surgical instruments are rendered aseptic by the use of steam, has been designed by Mr. Charles W. Cathcart, F.R.C.S. The difficulty with which the inventor had to contend was to prevent the deposit of moisture on the instruments, and also to deliver the steam free from carbolic acid gas, in order to prevent rusting of the metals exposed to its action.

Both these difficulties appear to have been overcome, and the result is an appliance very simple in its practical working, by which a number of surgical instruments can be rendered absolutely aseptic with the least possible inconvenience. Messrs. Down Bros., of 5 and 7, St. Thomas Street, London, S.E., are the manufacturers, and they

supply a fully descriptive and illustrated circular respecting this invention, to which we must refer the reader for further particulars.

Stethoscope (Bin-Aural).—A valuable improvement upon the ordinary bin-aural stethoscope has been devised by Dr. George Herschell. It consists of the use of a clamp in lieu of a spring, by which the ear pieces can be adjusted precisely without undue pressure. This is managed by placing them in the auditory meatus, and then moving a small lever, which fixes them in the desired position. The stethoscope is made by Messrs. Down Bros., of St. Thomas St., Borough, S.E., and we must compliment them upon the very serviceable and durable instrument they have produced. It is decidedly a stethoscope which will stand wear and tear, having no parts likely to break or get out of order. The instrument they send us has another improvement, which is the invention of Mr. Skinner, and which in our opinion greatly adds to its value. It is a finger rest, by which the chest piece can be retained in contact with the body by simple pressure of the finger. This mode of holding the chest piece avoids any chance of friction sounds being caused, and is particularly convenient. Dr. Herschell's stethoscope can be obtained with or without this modification, but we shall decidedly recommend that

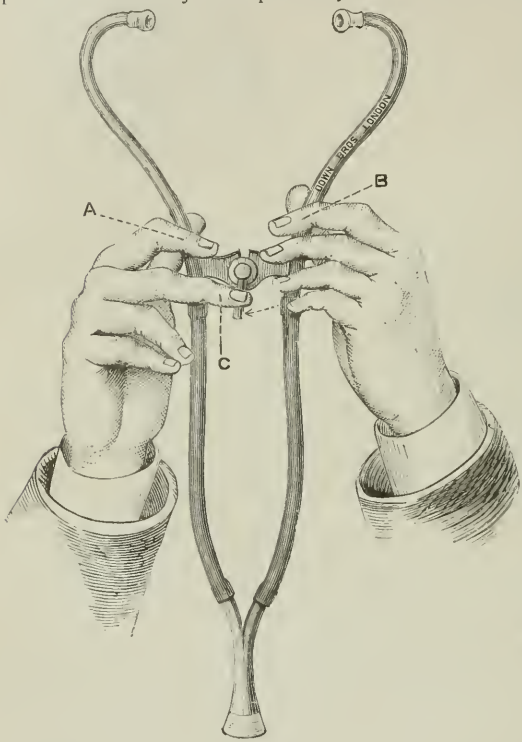

Fig. 70.

with the chest piece, which is a valuable addition to any bin-aural stethoscope.

Messrs. Ferris & Co., of Bristol, have produced a bin-aural stethoscope which has the particular advantages of being very light and compact, and also inexpensive. Its lightness is due to the fact that the metal tubes are made of aluminium. It is especially suitable for carrying in the pocket, and the results obtained with it by auscultation prove it to be a very serviceable instrument.

Sulphite of Zinc Gauze.—Messrs. Robinson & Son, of Chesterfield, have lately introduced a new form of gauze for dressing, the antiseptic quality of which is due to sulphite of zinc. A large number of our surgical colleagues have used this gauze and speak highly in its favour. On scientific and practical grounds it has much to recommend it, and we should strongly advise its further trial.

Surgical Bandages.—Messrs. Matthews Bros., of 10, New Oxford Street, W.C., have lately patented a very simple but desirable addition to those surgical bandages where pressure is particularly desired over a given point. Thus, in the ordinary knee-cap, if the bandage is applied tightly enough to give sufficient pressure on either side of the patella, it will interfere with the action of the ham-string muscle and obstruct the circulation. Such difficulties occur in the application of bandages to many parts of the body, and the above firm have obviated it by the use of a few blunt hooks on either side of the part where pressure is required, and these are approximated by the use of an ordinary piece of elastic, as shown in the illustration.

Fig. 71.

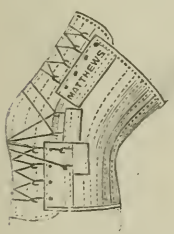

Fig. 72.

This arrangement of hooks and elastic applied to the ordinary knee-cap gives the maximum of pressure with the minimum of inconvenience, great latitude of movement being possible, while support is given at those points where it is most required.

The same arrangement is equally applicable to various forms of belts and stockings. The usefulness of the invention will be readily recognized by the reader.

Syphon Douche.—One of these appliances, recently brought out by Messrs. Ferris & Co., of Bristol, appears to us particularly worthy of notice, not because it introduces any new principle, but because it is so well made and adapted for every purpose for which a douche may

be required. It can be used with any form of vessel for containing the injecting fluid, and the flow is not only continuous but can be precisely regulated both as regards force and volume. Such appliances are much to be preferred to the "Enema" syringe, and are more durable. One or more should be found in every Hospital ward on account of the amount of labour they save.

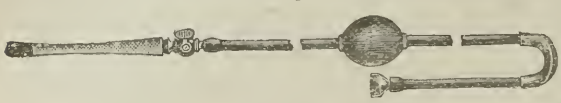

Fig. 73.

The Teufel Appliances.—The firm of Teufel have long been renowned in Germany for their peculiar skill in the manufacture of various medical appliances, and branch establishments have been opened in London and New York by a company, in order that their remedial appliances may be further introduced to the medical profession. Some specimens of their work which have come under our notice show that the secret of their success lies in the accurate adaptation of the means to the purposes in view. Thus, their "stoop-cure," for preventing stooping and round shoulders, is not a simple brace for forcing and retaining the shoulders in their proper position. This would fail in its object, because it would throw out of use the muscles which it should be the aim of treatment to strengthen. Instead of the contrivances to which we are accustomed, and of which we disapprove, they have a firm but fully flexible back piece, secured at one extremity by a waist-belt and at the other by two bands which pass round the upper part of the arms. Now, if these bands were directly connected with the back piece we should regard the appliance as open to the objections we have mentioned, but they are attached to two springs which have a backward inclination, but which are not strong enough to force the shoulders into their proper position. Their effect is to encourage the effort of the muscles, and to remind the wearer when the shoulders tend to stoop forwards. The appliance acts as a mentor rather than as a constraint, and can therefore be recommended and used with great advantage.

The Teufel Menstrual Safe-Guard is a convenient and well-designed appliance for retaining an absorbent pad during the menstrual period. It not only fulfils this office efficiently, but it gives a certain degree of support over the pubes while it is worn. The crude arrangements ordinarily worn are well calculated to cause chill, and also chafing of the parts, and this may properly be called a "safe-guard" against such accidents.

The manufacturers of **Teufel Abdominal Belts** have acquired considerable reputation by meeting the conditions of the individual patient. It is difficult to describe the mechanism of the various systems they employ, but one of the features of their belts is that they do not trust to the simple circular compression to effect the desired result, but by means of a broad elastic band which can be adapted after the belt is laced, the ordinary tendency to bulging in front can be obviated. This belt would be very suitable for cases of uterine ante-version. The appliances are not only well made, but in a manner which should render them durable. The London office of the Teufel Appliance Co. is at 61, Moor Lane, London, E.C., where correspondence should be directed, and there is a sample depôt (with female assistants) at 456, Strand, W.C., first floor.

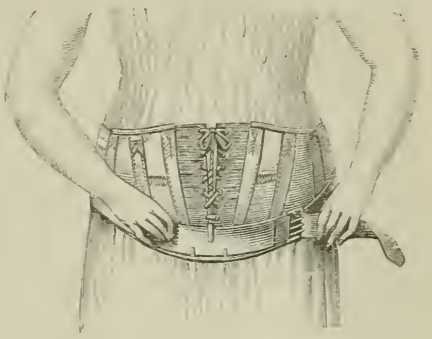

Fig. 74.

Tongue Depressor and Insufflator (Combined).—This is the best appliance for the insufflation of powders upon the uvula or pharynx that has been yet produced. A well made (vulcanite) tongue depressor carries a tube along its dorsum which terminates at one extremity in an india-rubber tube, with a mouth piece, a receptacle for powder intervening. The tongue depressor flexes the tongue, and the operator by slightly blowing through the mouth piece conveys the powder to the part of the throat desired. The whole is well and strongly made by Sumner & Co., and costs 4s.

Tracheotomy Tube (Aluminium).—The advantage possessed by this tube, which is supplied by Messrs. Ferris & Co., is its great lightness, due to the fact that it is made of aluminium. It is well made, and particularly easy to keep clean while *in situ*.

Truss (Coles's Patent).—This firm, now at 225, Piccadilly, W., has been well known for many years for the sound scientific principles on which their trusses are produced. The principle of the Coles's truss as distinguished from others, lies in having a coiled spring within a metal shield, which yields to the movements of the wearer, and, exerting pressure itself, enables the truss spring to be lighter than it other-

wise might; this will be readily understood from the illustration (*Fig.* 75). It is a very good pattern both of truss and pad, and we can heartily recommend it. The instructions for measuring patients for various forms of trusses, issued by the firm, are of great use to practitioners residing in the country, and may be had on application.

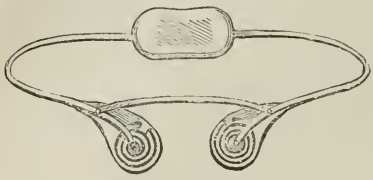

Fig. 75.

Trusses (India-Rubber) for Children.—Messrs. R. Sumner & Co., of Liverpool, have sent us a sample of their trusses for children's use. The single ones cost 1s. 6d., and the double ones 6d. more. They are made so that the pads are inflated with air. They are cleanly to use and very comfortable, and the price is remarkably small.

Uterine Pencils (Iodoform).—After operation on the uterus or during the treatment of affections of the cervix, there is no better way of securing asepsis than by the use of a pencil of iodoform, which can be pushed up the canal and left *in situ*. But we have found by experience, that unless these pencils are exceptionally well made, they are easier to break than to introduce. Some sent us by Messrs. Sumner & Co. have answered our purpose in a way that none others have done, and we heartily commend them to the profession.

Uterine Probes.—The new style of this instrument made by the same firm, has a metal instead of a wooden handle. The advantage is obvious. The cost of the new instrument is only 3s. 6d.

Vereker Chloride of Ammonium Inhaler.—Messrs. Burroughs, Wellcome & Co. inform us that the inhaler which we noticed in our last issue has been altered so as to render it more portable.

MISCELLANEOUS.

Medical Book-keeping.—The system of Medical Book-keeping almost universally adopted in America, is one which saves the physician an immense amount of time and labour, and permits the exact position of the indebtedness of patients to be seen at a glance.

It would be difficult to describe in detail the ingenious method of arrangement, but the general plan of the book is that it is wholly an index, and it is as easy to find the account of any patient as it would ordinarily be to find the name in the index of an ordinary ledger. The name requires to be entered only once in the year, and every visit paid or service rendered with its appropriate charge can be registered

with the least possible trouble under its proper date. Messrs. J. Wright & Co., of Stone Bridge, Bristol, have published an English edition of the "Physicians' and Surgeons' Register," and we think it will be only necessary for the practitioner to see a copy to appreciate its value.

While on this subject we may say that one of the causes of delay we have noticed in practice is the time wasted by patients in supplying the necessary paper, pen and ink, for writing a prescription when required. We have for some time obviated this by carrying our own paper, in the form of a prescription block, perforated at the top (made for us by Messrs. Wright & Co., of Bristol), and our own pen and ink, in the shape of a "Swan Fountain Pen," which is one of the few ink reservoir pens which will answer, and which we now use for every kind of writing. We may not be alone in adopting this time-saving arrangement, but the hint may nevertheless be worth giving.

Many of our readers who have trouble with bad debts and difficulties in regard to Book-keeping have utilised the services of the British Medical Protection Society, of 8, Berners Street, Oxford Street, and the results have been most satisfactory; the existence of this reliable and straightforward agency is worth noting, especially as the subscription is but small.

Amberg Letter File.—There are few practitioners who have not had occasion to appreciate the necessity of arranging their correspondence in a methodical manner. We have employed the system of the Amberg File and Index Co., of 27, Little Britain, London, and with such satisfactory results that we can strongly recommend our readers to apply to the Company for particulars of the method, which our space will not permit us to describe in detail. We can say, however, shortly that by this plan correspondence, accounts, invoices, in fact, any written documents may be put away and found again at almost a moment's notice, at any time, even after a lapse of years.

Type-Writing.—A large proportion of the letters and manuscripts which come to us is type-written, a fact which shows how extensively the type-writer has come to be employed by the medical profession. We find that in spite of younger rivals most of our friends use the "Remington," and those who begin with what may be called "toy" machines invariably find that they lose time as well as money. The practitioner who wishes to make use of the advantages of type-writing should buy a

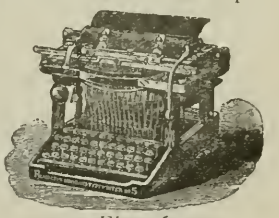

Fig. 76.

"Remington" at once. We know that this will save time and do its work in a satisfactory manner.

Concerning the many new machines which are constantly being introduced we know very little, and their purchase is often a very risky speculation, as we know personally to our cost.

A "Remington" type-writer is a luxury to those who have to do much correspondence, but it is one which soon becomes an economy.

Baldness.—Mr. W. Clarkson, of 45, Wellington Street, Strand, has submitted to us samples of his head coverings and material for making the foundations of wigs of all kinds, which appear to us practically invisible. Indeed, when a piece of this foundation net is laid across, say the back of one's hand, one can scarcely detect the part covered. To patients afflicted with baldness, and who are at the same time susceptible to cold, the question of a head covering that shall preserve the necessary amount of warmth, together with due regard to the ventilation of the head, is one of some importance. Mr. Clarkson's productions appear to us to do this, and at the same time retain a most natural appearance. We understand also that full particulars for self-measurement can be sent to clients at a distance from town.

Hall Stoves, and Fireplaces.—A most important part of the furniture of a dwelling house, especially where invalids are concerned, is a dependable hall stove, that is, one of a right kind that will as far as is possible burn continuously, warm the air moderately and equably without consuming an inordinate quantity of air and so creating draughts, and of handsome design as well. Colds and bronchitis are often contracted in houses, where in severe weather the passages, staircases and landings may be bitterly cold, while the rooms are unduly hot. Yet few people wrap up when passing from one part of a house to another, and thus great mischief is done. For halls and consulting rooms we know no better appliances for equalizing the temperature than the Hygienic Stoves, manufactured by Messrs. Harry Hunt & Co., of 12, New Oxford Street, W.C. They are also cheerful in appearance, the fire being seen through the mica panes in the front and sides. The same firm also call our attention to a much improved slow combustion fireplace at a moderate price, which they build upon the plans advocated by Count Rumford and Dr. Pridgen Teale, in which the setting of the fire-brick baffle backs and cheeks are so arranged that much more heat appears to be thrown into the room in proportion to coal consumed than in the older forms of these grates.

Leather and Rubber Combination Soles for Boots.—These may be looked upon as a fundamental advance in personal hygiene. A fruitful source of illness has always been damp feet, and many attempts have been made from time to time to remedy it. In the above patented manufacture the sole of the boot has been dealt with, and absolute protection from wet ensured by the interposition of a thin layer of rubber studded with thicker round rubber buttons or studs between the inner and outer soles of the boot or shoe, the latter being perforated to admit of the studs above mentioned coming through the leather to the level of the rest of the sole. The rubber being situated only *between* the two leather soles admits of free ventilation to the feet, the want of which is so great a drawback to an ordinary rubber shoe, while at the same time the entire sole need be no thicker than ordinary. Clad in a pair of these boots a lady may stand for an afternoon upon damp grass at a garden party without fear of wet feet, with all its dangers. In addition to this for the physician's or nurse's use in the sick room, may be mentioned another great advantage possessed by these boots in having an almost noiseless tread, besides which they are said to last very much longer than ordinary leather soles. Manufactured by the Leather and Rubber Boot Co. at 104, New Bond Street, and 65 & 66, Chancery Lane, London; and at Albion Street, Leeds.

The Therapeutic Pipe.—Externally this has all the appearance of an ordinary briar-wood pipe, but internally it is provided with a complete sanitary system—accumulator, radiator, drainer, and air chamber. The smoke is filtered and cooled before it enters the stem, any superfluous moisture is removed by a drainer beneath the bowl, and finally the smoke undergoes a second filtration as it passes along the stem. These arrangements may also be made useful for medicating the smoke, so that the sufferer from asthma or catarrh may combine the business of medication with the pleasure of the fragrant "weed."

The construction is good, and the arrangements well calculated to fulfil the objects in view. The Therapeutic Pipe Co., 112, Alexandra Road, Manchester.

Lunatic Asylums and Homes for Inebriates in Great Britain and Ireland.

We are very anxious to make this list complete, and to give all necessary information; but unless our circular of enquiry—*which in every case is stamped for reply*—is promptly returned, we cannot undertake the responsibility of inserting particulars of an Establishment which may have been closed.

ABERDEEN.—*Royal Asylum.* Res. Med. Sup., Wm. Reid., M.D.; Treasurer, Wm. Carmie, 27, Exchange Street.

ABERGAVENNY.—*Joint Counties Asylum.* Med. Sup., James Glendinning, M.D. Access—G.W.R. Station, ½ mile; L. and N.W. Station, ¾ mile.

ALTON (Hants).—*Westbrook House.* Prop., Mrs. E. J. Burnett.

ARGYLL and BUTE.—*District Asylum*, Lochgilphead. Res. Med. Sup., J. Cameron, M.D. Access—Rail to Greenock, thence by Steamer to Ardrishaig, 2½ miles distant.

ARMAGH.—*Course Lodge*, Richhill, 5 miles from Armagh (for ladies only). Proprietors, James and Wm. Orr; Visiting Physician, R. Gray. Access—Richhill Station, thence by own Conveyance, 2 miles.

The Retreat. Proprietor, Mr. A. D. Allen. (For 20 male and 15 female patients, middle class). Access—Richhill, thence cab 1½ miles.

AYR.—*District Asylum.* Med. Sup., C. H. Skae, M.D.

BALLINASLOE (Co. Galway).—*District Lunatic Asylum.* Res. Med. Sup., R. V. Fletcher, M.D. Access—Ballinasloe.

BANFF.—*District Asylum*, Ladysbridge. Visiting Physician, Wm. Ferguson, M.D.

BARNOLDSWICK (Yorkshire).—*Greta Bank.* Prop., Mrs. Parker.

BASCHURCH (Shropshire).—*Boreatton Park*, 10 miles from Shrewsbury. Res. Med. Sup., Dr. Sankey. Access—Baschurch Station.

See page 732.

BATH.—*Bailbrook House.* Prop. and Res. Med. Sup., Lionel A. Weatherly, M.D. Access—Bath, 15 minutes' drive. *See page* 731.

BECKENHAM (Kent).—*Springcroft.* Prop., Mrs. Stilwell.

BEDFORD.—*Bishopstone House*, Ashburham road (for 10 females). Prop. and Med. Sup., Wm. Simpson Craig, M.D. Access—Bedford.
See page 733.

Springfield House Asylum; 1 hour from London. Res. Med. Sup., D. Bower, M.D. Access—Bedford, 1½ mile.

BELFAST.—*Belfast District Lunatic Asylum.* Med. Sup., A. S. Merrick, M.D.

BEVERLEY.—*East Riding County Asylum.* Res. Med. Sup., M. D. Macleod, M.B. Access—Beverley Station, 2 miles.

BIRMINGHAM.—*Birmingham City Asylum*, Winson Green. Res. Med. Sup., E. B. Whitcombe. Access—Winson Green, ½ mile, Soho, ¼ mile.

Midland Counties Idiot Asylum. House Governor and Sec., W. G. Blatch; Hon. Med. Sup., J. H. Kimbell, F.R.C.S.; Med. Officer, R. H. Foster, M.R.C.S. Access—Knowle Station, ½ mile.

BODMIN.—*Cornwall County Asylum.* Med. Sup., Dr. R. Adams.

BOX (Wilts).—*Kingsdown House*, 5 miles from Bath. Prop., Mrs. E. A. Nash; Res. Med. Sup., Dr. J. J. F. Barnes. Access—Box.

BRENTWOOD.—*Essex County Asylum.* Med. Sup., Dr. G. Amsden.

BRIDGEND.—*Glamorgan County Asylum.* Res. Med. Sup., H. T. Pringle, M.D. Access—Bridgend, 1½ miles.

BRISTOL.—*Brislington House*, 2½ miles from Bristol. Res. Med. Sups., Drs. C. H. and B. B. Fox.

City and County Asylum. Med. Sup., Harry A. Benham, M.D.

Northwoods House, Winterbourne, 7 miles from Bristol. Props., Reginald Eager, M.D., and T. G. Seymour. Access—Cab from Bristol, or from Fishponds, Yate, or Patchway Stations. *See page* 735.

BRITON FERRY (Glamorgan).—*Vernon House*, near Neath and Swansea. Med. Sup., C. Pegge. Access—Briton Ferry Station, 3 minutes' walk.

BROMSGROVE.—*Birmingham City Asylum*, Rubery Hill, near Bromsgrove. Res. Med. Sup., A. C. Suffern, M.D. Access—Rubery Station.

BURGESS HILL.—*St. George's Retreat*, Ditchling. Res. Med. Off., Dr. John A. Cones. Access—Burgess Hill Station.

BUXTON.—*Wye House.* Res. Phys., F. K. Dickson, F.R.C.P. Access—Buxton.

CAMBRIDGE.—*County Asylum*, Fulbourn. Res. Med. Sup., E. C. Rogers, M.R.C.S.

CANE HILL, Purley (Surrey).—*London County Asylum.* Res. Med. Sup., Dr. J. M. Moody. Access—Coulsdon Station.

CARLISLE.—*County Asylum.* Res. Med. Sup., J. A. Campbell, M.D. Access—Carlisle, 3 miles.

CARMARTHEN.—*Joint Counties Asylum.* Med. Sup., G. J. Hearder, M.D.

CHARTHAM (Near Canterbury).—*Kent County Asylum.* Res. Med. Sup., Dr. R. Spencer. Access—Chartham Station, 1 mile.

CHEADLE.—*Manchester Royal Lunatic Hospital.* Res. Med. Sup., G. W. Mould, M.R.C.S.

CHESTER.—*Cheshire County Asylum.* Med. Sup., J. H. Davidson, M.D.

CHURCH STRETTON.—*Stretton House*, Shrewsbury (for gentlemen). Med. Sup., Dr. H. Barnett. Access—Church Stretton Station, 10 minutes' walk. *See page* 729.

The Grove House (for ladies). Res. Prop., Mrs. McLintock.

COLCHESTER.—*Eastern Counties Idiot Asylum.* Res. Med. Attend., F. W. Hall, M.B.; Res. Sup. and Sec., John J. C. Turner. Payment cases received from all parts. Election cases only from Eastern Counties.

CORK.—*District Asylum.* Med. Sup., Oscar Woods, M.D. Access—Cork, 1 mile.

CUPAR (Fifeshire).—*Fife and Kinross District Asylum.* Med. Sup., A. R. Turnbull, M.B.

DARLINGTON (Durham).—*Dinsdale Park.* Med. Sup., J. W. Eastwood, M.D., J.P.

DARTFORD.—*City of London Asylum*, Stone. Res. Med. Sup., Dr. E. W. White. Access—S.E.R., Dartford, 1 mile.

DENBIGH (North Wales).—*North Wales Counties Lunatic Asylum.* Med. Sup., Dr. Llewelyn F. Cox. Access—Denbigh, 1 mile.

DERBY.—*Borough Asylum*, Rowditch. Res. Med. Sup., Dr. Macphail. Access—Great Northern Station, 1 mile; Mid., 2 miles.

County Asylum, Mickleover. Res. Med. Sup., Dr. Lindsay. Access—Derby, 5 miles, Mickleover, 2 miles.

DEVIZES.—*Wilts County Asylum.* Res. Med. Sup., John Ireland Bowes, M.R.C.S. Access—Devizes, 1 mile.

DORCHESTER.—*Dorset County Asylum.* Med. Sup., P. W. MacDonald, M.D. Access—Dorchester, 3 miles.

DRUMCONDRA (Co. Dublin).—*Hartfield Retreat.* Med. Prop., Dr. Lynch.

Highfield (for ladies). *Hampstead* (for gentlemen). Med. Prop., John Eustace, M.D.

DUBLIN.—*Bloomfield Retreat*, Donnybrook Road. Med. Sup., Jas. H. Wharton, M.B.

Farnham House and Maryville, 3 miles from Dublin (for 56 patients, both sexes). Prop. and Res. Med. Sup., A. Patton, M.B. Access—Cab from Dublin.

House of St. John of God, Stillorgan. Med. Sup., Dr. McEvoy. Access—Stillorgan Station, ¼ mile. From Dublin 5 miles.

Woodbine Lodge, Bathfarnam, 6 miles (ladies). Prop., Mrs. Hayes.

DUDLEY (Stafford).—*Ashwood House*, Kingswinford, 4 miles from Dudley, 3 from Stourbridge (for 31 upper and middle class patients, male and female). Props., Drs. Peacock & Pietersen. Access—Stourbridge or Dudley Stations.

DUMFRIES.—*Crichton Royal Institution.* Med. Sup., James Rutherford, M.D., F.R.C.P., E., etc.

Southern Counties Asylum. Med. Sup., J. Rutherford, M.D.

DUNDEE.—*Royal Asylum*, West Green. Res. Med. Sup., James Rorie, M.D. Access—Dundee, 3 miles; Liff, 1½ miles.

DURHAM.—*County Asylum*, near Durham. Res. Med. Sup., Robert Smith, M.D. Access—Sedgefield Station, 3 miles, thence by 'Bus.

EARLSWOOD.—*Asylum for Idiots.* Res. Med. Sup., Dr. Robert Jones. Males 400, females 200. Admission by election or payment of 50 to 200 guineas per annum. Apply to Sec., 36, King William Street, London Bridge, E.C. Access—Earlswood Station, close to the Asylum; Red Hill Junction, 1½ miles.

EDINBURGH.—*Mavisbank House*, Polton, Midlothian. Res. Med. Sup., John Keay, M.D., M.R.C.P., E. Access—Polton Station, North British Railway, 5 minutes' walk.

Midlothian and Peebles District Asylum. Res. Med. Sup., R. B. Mitchell, M.D. Access—Rosslynlee Station, 1 mile.

Mollendo House, Musselburgh. Prop., P. Mackenzie. Cons. Phys., Thos. R. Scott, M.D. Access—Musselburgh Station, 10 minutes' walk.

Royal Edinburgh Asylum, Morningside. Phys. Sup., T. S. Clouston, M.D., F.R.C.P., E.

Saughton Hall. Res. Med. Sup. and Prop., Dr. John Batty Tuke, M.D., F.R.C.P., E. Access—Gorgie Station, 15 minutes.

ELGIN.—*District Asylum.* Med. Sup., J. W. N. Mackay, M.D.

ENNIS.—*District Asylum.* Res. Med. Sup., Richard Phillips Gelston, L.R.C.S., I., L.R.C.P., I. Access—Ennis Station, 1¾ miles.

ENNISCORTHY (Co. Wexford).—*District Lunatic Asylum.* Res. Med. Sup., Thomas Drapes, M.B. Access—Enniscorthy, 1 mile.

EPSOM (Surrey).—*Church Street* (for 14 ladies). Med. Sup., Dr. W. Clement Daniel. Access—Epsom Station, 5 minutes' walk.

EXETER.—*City Asylum*, Heavitree. Res. Med. Sup., R. L. Rutherford, M.D. Access—Exeter, L. and S.W.R., 3 miles; G.W.R., 4 miles.

Court Hall, Kenton. Mrs. Mules, Proprietress. Access—Starcross, 1 mile.

Devon County Asylum, Exminster. Med. Sup., G. J. S. Saunders, M.D. Access—Exminster Station, 1 mile; Exeter, 4 miles.

Wonford House (Hospital for the Insane). Res. Med. Sup., P. Maury Deas, M.B., M.S. Lond. Access—Exeter Station (Queen Street), 1½ miles; (St. David's), 2 miles. *See page* 733.

FAIRFORD (Gloucestershire).—*Fairford Retreat.* Res. Med. Prop., Daniel Iles, M.R.C.S. Access—Fairford Station.

The Croft House, near Swindon and Cirencester. Med. Sup., Dr. C. H. Bloxsome. Access—Fairford Station. *See page* 736.

GATESHEAD.—*Dunston Lodge Asylum*, Newcastle and Gateshead-on-Tyne. Access—Newcastle-on-Tyne Station, 3 miles.

GLASGOW.—*District Asylum.* Med. Sup., A. C. Clark, M.D.

Royal Asylum, Gartnavel. Res. Phy. Sup., D. Yellowlees, M.D., LL.D.

GLOUCESTER.—*Barnwood House.* Res. Med. Sup., F. Needham, M.D. Access—Gloucester, 2 miles.

Gloucester County Lunatic Asylums, Wotton and Barnwood, Gloucester. Res. Med. Sup., F. Hurst Craddock, B.A. Oxon, M.R.C.S. Access—Gloucester Station, 1 mile.

GOUDHURST (Kent).—*Tattlebury House* (for 6 males and 2 females). Med. Sup. and Prop., R. S. Newington, M.R.C.S., L.S.A. Access—Marden Station, 5 miles.

GREAT YARMOUTH.—*Royal Naval Hospital.* Dr. Thomas Browne, R.N., Fleet Surgeon in charge. Access—Great Yarmouth Station, ½ mile. For Naval patients only, admitted by Admiralty order.

HADDINGTON.—*District Asylum*, 17 miles from Edinburgh. Med. Sup., J. Bruce-Ronaldson, F.R.C.S., E., etc. Access—Haddington Station, 10 minutes' walk.

HARPENDEN (Herts.)—*Harpenden Hall*, 4 miles from St. Alban's (for 13 ladies). Prop. and Res. Med. Sup., A. Maclean, L.R.C.S. Ed., L.S.A. Lond. Access—Harpenden Station. *See page* 734.

HATTON (near Warwick).—*County Asylum.* Res. Med. Sup., Alfred Miller, M.B. Access—Hatton Station, 2 miles; Warwick Station, 3 miles.

HAWKHURST (Kent).—*North Grove House*, 15 miles from Hastings and Tunbridge Wells. Phys., W. M. Harmer, F.R.C.P. Access—Etchingham Station, 5 miles; Staplehurst Station, 10 miles.

HAYWARD'S HEATH.—*Sussex County Asylum.* Med. Sup., C. E. Saunders, M.D.

HENLEY-IN-ARDEN (Warwickshire). — *Glendossil and Hurst House* (for both sexes). Res. Prop., Dr. S. H. Agar. Access—Great Western Railway.

HEREFORD.—*County and City Asylum.* Med. Sup., T. A. Chapman, M.D.

HITCHIN (Herts), near.—*Three Counties Asylum.* Res. Med. Sup., E. Swain, L.R.C.P. Access—Three Counties Station, 1 mile.

HULL.—*Borough Asylum.* Med. Sup., J. Merson, M.D. Access—Willerby Station, 1 mile.

Craven Street Retreat, Sculcoates. Prop., J. Brown. Access—Hull, 1 mile.

INVERNESS.—*District Asylum.* Med. Sup., Thos. Aitken, M.D. Access—Inverness, 2½ miles.

IPSWICH.—*Borough Asylum.* Med. Sup., Dr. E. L. Rowe. Access—Ipswich, 2 miles.

ISLE OF MAN.—*Lunatic Asylum*, Union Mills. Med. Sup., W. Richardson, M.D. Access—Douglas, 3 miles.

ISLEWORTH (Middlesex).—*Wyke House.* Prop., E. Sparshall Willett, M.D. Access—Isleworth, Brentford, and Osterley Stations, 1 mile.

JERSEY.—*The Grove.* Prop. and Res. Med. Sup., Dr. Francis Neel Gaudin. 2 miles from St. Heliers, 2½ from St. Aubin. Access—G.W.R., *via* Weymouth, 4½ hours rail from London, and 5 hours sea passage; per L. and S.W.R., *via* Southampton, 2 hours rail and 8 hours sea passage. *See page* 737.

KINGSTON-ON-THAMES.—*Canbury House.* Prop., W. H. Roots, M.R.C.S.

KNOWLE (near Fareham).—*County Asylum.* Med. Sup., T. B. Worthington, M.D.

LANCASTER.—*County Asylum.* Res. Med. Sup., David M. Cassidy, M.D., D.Sc. Access—Lancaster Station.

LEEDS (near Meuston). *West Riding Asylum.* Res. Med. Sup., Dr. McDowall.

LEICESTER.—*Borough Asylum.* Med. Sup., J. E. M. Finch, M.D.

Leicestershire and Rutland Asylum. Res. Med. Sup., Dr. W. H. Higgins.

LETTERKENNY and LONDONDERRY.—*Donegal District Asylum.* Res. Med. Sup., Edward E. Moore, M.D. Access—Letterkenny and Lough Swilley Railway, ½ mile.

LEYTON (Essex).—*The Great House.* Prop., Mrs. Davey.

LICHFIELD.—*County Lunatic Asylum*, Burntwood, near Lichfield. Res. Med. Sup., James Beveridge Spence, M.D. Access—Lichfield City Station, 3½ miles; Trent Valley Station, 4½ miles; Hammerwich, 1½ mile.

LINCOLN.—*County Asylum*, Bracebridge. Med. Sup., J. W. Marsh, M.R.C.S.

The Lawn. Res. Med. Sup., Arthur P. Russell, M.B. Access—Lincoln Station, 1 mile. *See page* 736.

LIVERPOOL.—*Shaftesbury House.* Near Liverpool and Southport. Res. Med. Sup., Stanley A. Gill, B.A., M.R.C.P.Lond. Access—Formby Station, ¼ mile distant. *See page* 728.

Tue Brook Villa, 3 miles from Liverpool. Res. Med. Sup., Dr. H. Crawford MacBryan. (For 52 males and females.) Access—Tue Brook Station.

LONDON.—*Bethlem Royal Hospital*, St. George's Road, London, S.E. Res. Med. Sup., R. Percy Smith, M.D., F.R.C.P. *See page* 735.

Bethnal House, Cambridge Road, N.E. Res. Med. Sup., J. Kennedy Will, M.D. Access—Railway Station near East London Museum.

Brooke House, Clapton. Props., Mr. H. T. Monro and Dr. J. O. Adams; Res. Med. Sup., Dr. J. O. Adams. Access—Clapton Station.

Camberwell House, S.E. Prop., J. H. Paul, M.D. Res. Med. Sup., Frank Schofield, M.D.

County Asylum, Colney Hatch, N. Med. Sup., W. J. Seward, M.B.

Flower House, Catford Bridge, S.E. Med. Sup., C. A. Mercier, M.B. Access—C. and D. Rly., Beckenham Junc., 1 mile.

Grove Hall, Bow (both sexes). Med. Lics., Mr. Byas and Dr. Mickle. Access—Bow Road and Bow Stations, ⅛ mile.

Halliford House, Sunbury-on-Thames, S.W. Res. Med. Sup., D. R. Edwards, M.D. Access—Sunbury Station, 1¼ mile.

Featherstone Hall, Southall. Med. Lic., Mrs. H. E. Dixon.

Goudhurst, Stanley Road, Teddington. Med. Sup., Dr. R. A. Clarke.

Hayes, Wood End House (ladies). Uxbridge, 3 miles, London, 12 miles. Med. Lic., Dr. H. Stilwell. Access—Hayes Station, 1 mile.

Hayes Park, Hayes, Middlesex, near Uxbridge. Res. Med. Sup., Ed. Benbow and H. F. Winslow, M.D. Access—Hayes Station, 2 miles.

Hendon Grove Asylum, Hendon, Middlesex. Res. Med. Lic., H. Hicks, M.D. Access—By Mid. Rly., Hendon Station, ½ mile, or 'Bus from Swiss Cottage, St. John's Wood, N.W.

Homelea, Hammersmith, W. Prop., Mrs. Buck.

Hoxton House, London, N. Res. Med. Sup., John F. Woods. Access—Shoreditch Station, two minutes' walk; Liverpool Street Station, ten minutes' walk.

London County Asylum, Hanwell, W. Res. Med. Sups., R. R. Alexander, M.D., and J. P. Richards, M.R.C.S.

Manor House, Chiswick, and 37, Albemarle St., W. Lics., Mrs. Tuke and Thos. Seymour Tuke, M.A., M.B. C. M. Tuke, M.R.C.S., E. Access—Turnham Green Station, ⅓ mile.

Middlesex County Asylum, Banstead, S.E. Res. Med. Sup., T. C. Shaw, M.D.

Middlesex County Asylum, Tooting, S.W. Med. Sup., H. G. Hill, M.R.C.S. Access—Wandsworth Common Station, 1 mile.

Moorcroft House, Hillingdon (males). Uxbridge, 2 miles, London, 13 miles. Med. Lic., Dr. Stilwell. Access—West Drayton Stat., 2 miles.

Munster House, Fulham. Props., G. F. Blandford, M.D. and C. F. Williams.

Newlands House, Tooting, Bec Road, S.W. Prop., Dr. H. Sutherland. Res. Med. Supt., E. T. Hall, M.R.C.S.

Northumberland House, Green Lanes, N. Prop., A. H. Stocker, M.D. Res. Med. Sup., John Warnock, M.D. Access—Finsbury Park Station.

Otto House, 47, North End Road, Hammersmith, W. Med. Sup., Dr. H. Sutherland. Access—West Kensington Station, ¼ mile.

Peckham House, Peckham, S.E. Prop., Alonzo H. Stocker, M.D. Med. Sup., John Warnock, M.D. Access—Peckham Rye Station, 10 minutes' walk. *See page* 736.

Peterborough House, Fulham. Res. Med. Sup., James Robt. Hill, Access—Parsons' Green or Chelsea Station, 5 minutes' walk.

Royal Indian Asylum, Ealing, W. Res. Med. Sup., Thos. B. Christie, M.D. Access—Ealing Station, 1 mile; Ealing Common Stat., ½ mile

Silverton House, Peckham Rye. Prop., Mrs. A. G. Preston.

St. Luke's Hospital, Old Street, E.C. Med. Sup., G. Mickley, M.B.

Sutherland House, Surbiton, near Kingston-on-Thames (ladies). Res. Med. Sups., Robt. Collum, M.D. and A. T. Collum, L.R.C.P. Access—Surbiton, ¼ mile.

The Huguenots, East Hill, Wandsworth, S.W. (ladies). Prop., Miss Leech. Access—Clapham Junction Station.

The Priory, Roehampton, S.W., near Richmond. Res. Med. Sup., Dr. W. Wood. Access—Barnes Station, 8 minutes' walk.

The Shrubbery, Southall (females). Prop., Miss H. J. Rosser. Access—Southall Station, ¼ mile.

Vine Cottage, Norwood Green, Southall. Prop., Mrs. Chalk. Med. Sup., Dr. Thornton. Access—Southall Station, 1 mile.

MACCLESFIELD.—*Parkside Asylum.* Res. Med. Sup., T. Steele Sheldon, M.B. Lond. Access—Macclesfield Station, 1 mile.

MAIDSTONE.—*Kent County Asylum.* Res. Med. Sup., F. Pritchard Davies, M.D. Access—Maidstone Station, 1½ miles.

West Malling Place (for ladies). *Castle House* and *Winthies Cottage* (for gentlemen). Res. Med. Sup., Dr. James Adam. Access—Malling Station, 1 mile.

MARKET LAVINGTON (Wilts).—*Fiddington House.* Prop. and Res. Med. Sup., C. Hitchcock, M.D. Access—Devizes Station, 6 miles. *See page* 735.

MELROSE, N.B.—*Roxburgh District Asylum.* Res. Med. Sup., J. C. Johnstone, M.B. Access—Melrose, 1 mile.

MELTON.—*Suffolk County Asylum*, Melton, near Woodbridge. Res. Phys. and Sup., Wilson Eager, L.R.C.P. Access—Melton Station, 1¼ mile; Woodbridge Station, 2¼ miles.

MONAGHAN (Ireland).—*District Asylum*, Res. Med. Sup., Dr. Edward Taylor. Access—Monaghan, ¼ mile.

MONTROSE, N.B.—*Montrose Royal Lunatic Asylum.* Res. Med. Sup., J. C. Howden, M.D. Access—Hillside Station, ¼ mile; Dubton Station, 1 mile.

MORPETH.—*Northumberland County Asylum.* Res. Med. Sup., Thos. W. McDowall, M.D. Access—Morpeth Station, 1 mile, by 'Bus.

MOULSFORD (Berks).—*Berks County Asylum.* Med. Sup., J. H. Douty, M.R.C.S.

NELSON-IN-MARSDEN (Lanc.).—*Marsden Hall* (for both sexes). Res. Prop., Mrs. Bennett; Med. Sup., Dr. A. P. Millar. Access—Nelson or Colne Stations. *See page* 734.

NEWCASTLE-ON-TYNE.—*City County Asylum*, Gosforth. Res. Med. Sup., Jas. Thomas Callcott, M.D. Access—Newcastle, 1 mile.

NEWTON-LE-WILLOWS.—*Haydock Lodge.* Med. Prop., E. H. Beaman, M.R.C.S., E.; Res. Med. Sup., Dr. C. T. Street. Access—Newton-le-Willows Station, 2 miles.

NORTHAMPTON.—*Abington Abbey Retreat*, 1¼ mile to centre of town. Prop., H. S. Prichard. Med. Sup., Geo. H. Percival, M.B. Regular visits every other day, others when necessary. Access—Northampton Stations; and cabs in waiting to convey fares to any part of the neighbourhood. *See page* 730.

Berrywood Asylum. Res. Med. Sup., Dr. R. Greene. Access—Castle Station, 2 miles: Midland Station, 2½ miles.

St. Andrew's Hospital. Med. Sup., J. Bayley, M.R.C.S.

NORWICH.—*Heigham Hall.* Proprietress, Mrs. Watson. Res. Med. Sup., Thos. J. Compton, M.B.

Norfolk County Asylum, Thorpe. 800 Beds. Res. Med. Sup., David G. Thomson, M.D. Access—Norwich (Thorpe) Station, 2 miles.

Norwich City Asylum, Hellesdon. Res. Phys. and Sup., Dr. Wm. Harris; Hon. Con. Phys., Dr. Bateman. Access—Thorpe, cab fare 4/-; Victoria Station, cab fare 3/6; City Station, fare 3/-; Hellesdon Station, ½ mile.

The Bethel Hospital for the Insane. Res. Med. Sup., J. Fielding, M.D.; Con. Phys., Dr. Bateman, F.R.C.P. Access—Thorpe Station, 1 mile.

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PERTH.—*District Asylum.* Med. Sup., C. M. Campbell, M.D.

James Murray's Royal Asylum (for private patients only), Perth and Kincarrathie, Scotland. Res. Phys. and Sup., Dr. Urquhart. Access—Perth, under 2 miles. *See page* 731.

PLYMOUTH.—*Plympton House*, Plympton, S. Devon. Res. Med. Sup., Charles Aldridge, M.D. Access—Plympton, 1 mile; Marsh Mills, 2 miles.

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ROTHERHAM (Yorkshire).—*The Grange*, near Rotherham, 5 miles from Sheffield (for ladies). Res. Med. Prop., C. Clapham, M.D. Access—Grange Lane Station, ¼ mile. *See page* 734.

SALISBURY.—*Fisherton House Asylum.* Med. Sup., William Corbin Finch, M.D. Access—Salisbury Stat., 5 minutes' walk. *See page* 727.

Laverstock House. Prop., J. Haynes; Med. Sup., Hy. J. Manning, M.R.C.S.

SHREWSBURY.—*Salop and Montgomery Counties Lunatic Asylum.* Res. Med. Sup., Arthur Strange, M.D. Access—Shrewsbury Station, 2½ miles.

STAFFORD.—*County Lunatic Asylum.* Res. Med. Sup., Dr. J. W. Stirling Christie. Access—Stafford Station, about 1 mile.

Institution for the Insane. Coton Hill, Med. Sup., Dr. R. W. Hewson.

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WADSEY (near Sheffield).—*West Riding of Yorkshire Asylum.* Med. Sup., W. S. Kay, M.D.

WAKEFIELD.—*West Riding Asylum.* Res. Med. Sup., W. Bevan Lewis, L.R.C.P.

WATERFORD.—*St. Patrick's Institution*, Belmont's Park. Med. Sup., Dr. W. R. Connolly. *See page* 732.

WELLS.—*Somerset and Bath Asylum*, Wells, Somerset. Res. Med. Sup., A. Law Wade, M.D. Access—Wells, 2 miles; Masbury, 2½ miles.

WHITCHURCH (Salop).—*St. Mary's House.* Med. Sup., S. T. Gwynn, M.D. Access—Whitchurch Station, 1½ miles.

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The Friends' Retreat. Med. Sup., R. Baker, M.D.

York Lunatic Asylum, Bootham. Res. Med. Sup., C. K. Hitchcock, M.D., M.A. Cantab. Access—York, 1 mile. *See page* 736.

TRAINING INSTITUTIONS.

CHILCOMPTON (near Bath).—*Downside Lodge.* Med. Sup., Alex. Waugh, M.D. Access—Chilcompton Station, about ¼ mile. *See page* 736.

KINGSTON-ON-THAMES.—Normansfield Training Institution (for backward and feeble-minded children). Med. Sup., Dr. Langdon Down. For 100 male and 60 female patients of the upper class. Access—Hampton Wick Station, 5 minutes' walk. *See page* 730.

LANCASTER.—*Royal Albert Asylum* (for idiots and imbeciles of the Northern counties. For 600 patients). Res. Med. Sup., G. E. Shuttleworth, B.A., M.D.; Sec., James Diggens. Admission by election, or at various rates of payment. Access—Lancaster Station, 1 mile.

Brunton House, a home for special private pupils under training at the Royal Albert Asylum. Sec., James Diggens. Access as above.

Homes for Inebriates.

Formalities necessary before the reception of a patient (under the Inebriates' Acts of 1879 and 1888) into the Homes marked with an asterisk.

The patient must sign a Form expressing a wish to enter the retreat, before two magistrates (who need not be Magistrates for the County in which the signature takes place). This can be done at the private residence of the patient, or on arrival at the retreat. Two friends of the patient must also sign a statutory declaration that they consider the patient an "Inebriate" within the meaning of the Acts.

BRISTOL.—*Dunmurry*, Sneyd Park, near Clifton. Res. Med. Prop., Dr. James Stewart, B.A., F.R.C.P. Ed. Access—Bristol or Clifton Down Stations, 1¼ mile from the latter.

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LEICESTER.—*Tower House* (for ladies). Prop., Mrs. Theobald ; Med. Attendant, Dr. J. St. T. Clarke.

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MANCHESTER (near).—*The Grove*, Fallowfield.

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SYDENHAM. *British Women's Home.* Hon. Sec., Mrs. Chater.

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Hydropathic Establishments of Great Britain.

We wish to make this list complete, but it is impossible when some Proprietors do not return our letter of enquiry which is *stamped for reply*. This will account for some omissions in the present edition.

ABERDEEN.—*Deeside Hydropathic Establishment*, Heathcot, near Aberdeen.—Res. Med. Sup., Alexander Stewart, M.D., LL.D., F.A.S. Access—Rail to Aberdeen, thence by cab or omnibus. Hydropathic conveyance meets any train when sent for, distance 5 miles.

See page 738.

BASLOW (near Chesterfield). *Baslow Hydropathic Establishment*, near Chatsworth Park, Derbyshire. Res. Med. Sup., E. M. Wrench, F.R.C.S. Access—Rowsley Station, 4½ miles.

BATH.—*West of England Hydropathic Establishment*, Limpley Stoke, near Bath. Res. Phys., C. J. Whitby, M.B. Access—Limpley Stoke Station.

BEN RHYDDING.—*Ben Rhydding.* Near Leeds, Bradford, or Harrogate. Phys., Thos. Johnstone, M.D., M.R.C.P. Access—Ben Rhydding Station, a few hundred yards.

BISHOPS-TEIGNTON (near Teignmouth).—*The South Devon Health Resort.* Prop., C. F. Carpenter. Med. Sup., R. D. Broughton, M.R.C.S. Access—Teignmouth Station, 2½ miles.

BORTH (Cardiganshire).—*Hydropathic Establishment.* Med. Sup., J. Harden Jones, M.R.C.S.

BOURNEMOUTH (Hampshire).—*Bourne Hall*, a residence under medical direction (not a Hydropathic or confirmed Invalid Establishment). Res. Phys., Ed. P. Philpots, M.D. Access—Bournemouth, West Station, 1 minute's walk.

Bournemouth Hydropathic Establishment. Res. Prop., James Osborne, M.D. Access—Bournemouth, East Station, 1 mile; West Station, ¼ mile.

BRIDGE OF ALLAN.—*Bridge of Allan Hydropathic Co.* Manager, J. Mackay. Access—Bridge of Allan Station, ½ mile.

BRISTOL.—*Bartholomew's Turkish-Bath and Hydropathic Sanatorium*, College Green. Res. Med. Sup., W. J. Spoor, M.B., M.R.C.S.

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COLWYN BAY (North Wales).—*Colwyn Bay Hydropathic and Winter Residence.* Med. Sup., Dr. M. V. Williams. Access—Colwyn Bay Station, 7 minutes' walk.

CORK.—*St. Ann's Hill Hydropathic.* Res. Phys., M. Altdorfer, M.D. Access—Blarney Station, 2½ miles distant ; Muskerry Light Ry. from Cork, Station on grounds. *See page* 741.

CRIEFF.—*Strathearn House* (17 miles from Perth). Res. Med. Sup., Thos. H. Meikle, M.D., J.P. Access—Crieff Station, 1 mile.

DUNBLANE.—*Dunblane Hydropathic*, Stirling. Vis. Med. Sup., Dr. Thos. Brown. Access—Dunblane Station, 1 mile. *See page* 739.

EDINBURGH.—*Hydropathic.* James Bell, Man. Director.

FARNBOROUGH (Hants).—*The Pine Therapeutic Establishment.* Apply to the Secretary.

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FORRES.—*Cluny Hill Hydropathic.* Res. Man. R. Bond ; Vis. Phys., Dr. Leslie H. Milne. Access—Forres Station, 1 mile ; Inverness, 24 miles. *See page* 742.

GRANGE-OVER-SANDS.—*Hazelwood Hydropathic.* Con. Phys., Dr. Anderson. *See page* 740.

HARROGATE (Yorkshire).—*The Cairn Hydropathic.* A. E. Wynn, Manager.

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Smedley's Hydropathic Establishment, Matlock Bridge. Phys., Wm. B. Hunter M.D., and (Res.) W. C. Sharpe, M.B. Access—Matlock Bridge Station, ½ mile; Omnibus. *See page* 739.

MELROSE.—*Waverley Hydropathic.* Med. Sup., Dr. Somerville. Access—Melrose Station, 1 mile.

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LLANDUDNO.—*Ormeside.* Prop., **E. Luke Freer, M.R.C.S.**

See page 739.

Books of the Year.

A List of the Principal Medical Works and New Editions Published during 1891.

AMBULANCE AND NURSING.

Ambulance Lectures on Home Nursing and Hygiene. By S. Osborn. 2nd ed., with Illusts. Fcap., pp. 158. *Lewis* 2/-

Ambulance Work, Illustrated Lectures on. By R. L. Roberts. 4th ed., with Illusts. Cr. 8vo., pp. 230. *Lewis* 2/6

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The **BONUSES** declared have always been very large, and there is every prospect of at least equally satisfactory results being experienced in the future, because, on account of the methods adopted in the valuations, all interest earned on the investments over and above 2½ per cent. will be available for the profit fund.

ADVANCES.

The DIRECTORS have adopted a Mortgage Assurance Scheme, which is more particularly intended to assist purchasers in buying freehold or leasehold property for their own occupation. (For particulars see Prospectus).

FIRE DEPARTMENT.

Moderate Rates. Liberal Conditions. Prompt Settlement of Claims.

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The Principles on which this Company was founded, and on which it continues to act combine the system of Mutual Assurance with the safety of a large Protecting Capital and Accumulated Funds, and thus afford all the Facilities and advantages which can prudently be offered by any Life Assurance Office. Under these principles the business of the Company continues rapidly to increase. Ninety per Cent. of the whole profit is divided among the Assurers on the Participating Scale. The Profits are divided every Five Years. The next division will take place on 31st December, 1895. Claims paid on proof of Death and Title. Policies Indisputable after Five Years from the date of issue, except in the case of persons Military or Seafaring by Profession. Annuities of all kinds are granted, and the rates fixed on the most favourable terms.

FIRE DEPARTMENT.

Property of nearly every description, at Home and Abroad, Insured at most favourable Rates. Net Premiums for 1890 amounted to **£1,389,157 11s. 11d.** *Losses from Fire occasioned by Lightning* are made good by this Company. *Losses or Damage caused by explosion of Gas* in Buildings not forming part of any Gas Works are made good by the Company. *Insurances* effected for seven years will be charged six years Premiums only. *No charge for Alterations by Endorsements. Rents of Buildings Insured.* Claims settled with promptitude and liberality. No charge made for Policies.

TOTAL ASSETS AT 31st DECEMBER, 1890 £10,439,944.

I.—Authorised Capital	£3,000,000 0 0	
Subscribed Capital	2,759,000 0 0	
Paid-up Capital		£687,500
II.—Fire Funds (including Balance of undivided Profit)		2,731,430
III—Accumulated Life and Annuity Funds		7,021,014
		£10,439,944

REVENUE FOR THE YEAR 1890.

Fire Premiums, Interest, &c.	£1,495,818
Life and Annuity Premiums, Interest, &c.	992,379

The Accumulated Funds of the Life Department are free from liability in respect of the Fire Department, and in like manner the Accumulated Funds of the Fire Department are free from liability in respect of the Life Department.

Prospectuses and every information can be obtained at the Chief Offices.

London: 61, Threadneedle St., E.C. Edinburgh: 64, Princes St.
London (West End Branch): 8, Waterloo Place, S.W.

Medical Annual Official and Trade Directory.

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Naval Medical Department.—Admiralty, Avenue House, Northumberland Avenue, London, W.C. James Nicholas Dick, C.B., Director-General.

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PROVINCES—John Birkett, F.R.C.S., 62, Green Street, Grosvenor Square, W.
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Æsculapian Society—70, Marquess Road, Canonbury, N.
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Association for the Advancement of Medicine by Research—Secretary, 57, Wimpole Street, W.
Association of Fellows of the Royal College of Surgeons of England—Secretary, 37, Welbeck Street, W.
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British Medical Association—429, Strand, W.C.
British Medical Benevolent Fund—Sec., 16, Upper Berkeley St. Portman Sq., W.
British Medical Temperance Association—Sec., Carlton House, Enfield,
Chemical Society—Burlington House, Piccadilly, W.
Clinical Society of London—20, Hanover Square, W.
Dermatological Society of London—Secretary, 14, Harley Street, W.
Entomological Society—11, Chandos Street, Cavendish Square, W.
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General Practitioners' Alliance—Secretary, 83, Chiswell Street, E.C.
Geological Society of London—Burlington House, Piccadilly, W.
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"The Lancet" Relief Fund—Secretary, Strand, W.C.
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Deaconesses Institution, Tottenham
East London Nursing Society, 49, Philpot Street, Commercial Road, E.
General Lying-in Hospital, supplies Monthly and Wet Nurses, York Road, Lambeth
General Nursing Institute, Henrietta Street, Covent Garden, W.C.
Guy's Hospital Trained Nurses' Institution, 14, St. Thomas St., S.E.
Hamilton Association for Trained Male Nurses, 57, Park Street, Grosvenor Square, W.
Hampstead Home Hospital and Nursing Institute, Parliament Hill Road, N.W.
Hanover Institute, 22, George Street, Hanover Square, W.
Highbury Association of Nurses, 252, St. Paul's Road, Islington, N., Belgrave Branch, 157, Sloan St., S.W.
Holy Cross Society of Trained Nurses, 38, Ladbrook Road, W.
Hooper, Miss, Nurses Agency, 9, Upper Baker Street, N.W.
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Institution for Nurses for Nervous and Mental Disorders, 1, Northop Street, Grosvenor Square, W.
Kensington District Nursing Association, 1, Bedford Gardens, W.
London Association of Nurses, 123, New Bond St., W.—Branch Offices, 86, Kennington Park Road, S.E.
London, Clapham and Brixton Association of Trained Nurses, 210, Clapham Road, S.W.
London Hospital Private Nursing Institution, Whitechapel Road, E.
Metropolitan and National Nursing Association for the Poor, 23, Bloomsbury Square, W.C.
Middlesex Hospital Institute, 17, Cleveland Street, W.
Mildmay Nursing House, 9 & 10, Newington Green, N.
Nightingale Fund for Training Nurses at St. Thomas' Hospital, Sec., 5, Hyde Park Square, W.
North London Massage Institute, 8, Alexandra Rd., Finsbury Park, W.
North London Nursing Association for the Poor, 413, Holloway Road, N.
Nursing Institute, 39 & 41, Boundary Road, N.W.
Nursing Sisters' Institution, 4, Devonshire Square, Bishopsgate
Nursing Sisters of the Poor, 14, Wellington Road, E.
Paddington and Marylebone District Nursing Association for the Poor, 510, Edgeware Road, W.
Queen Victoria Jubilee Institute for Nurses, for the Poor, St. Katherine's Royal Hospital, Regents Park
Royal British Nurses' Association, 8, Oxford Circus Avenue, 231, Oxford Street, W.
Royal Free Hospital Trained Nurses Institute, Gray's Inn Road, W.C.
St. Bartholomew's Hospital Nurses' Institute, 13, West Smithfield, E.C.
St. Helena Home, 1, Grove End Road, St. John's Wood, N.W.
St. John Ambulance Association, St. John's Gate, Clerkenwell
St. John the Divine Nursing Sisterhood, 68, Drayton Gardens, S.W.
St. John's House and Sisterhood, 8, Norfolk Street, Strand, W.C.

St. Mary Magdalene's Institution, 3, Delamere Crescent, Paddington, W.
South London Institute, Forest Hill, S.E.
Westminster Training School, 27, Queen Anne's Gate, S.W.
Wigmore Institution, 2, Mansfield Street, Portland Place, W.
Wilson, D. E., 96—98A, Wimpole Street, W.

PROVINCIAL.

Bath.
Hospital Nursing Institute, 1, Duke Street
Nurses' Institute, 44, Rivers Street

Bournemouth.
Nurses' Institute

Bradford.
Nurses' Institute, Manningham lane

Brighton.
Rawlinson Institution, 113, King's Road
West End Nursing Institution, 1, York Road

Bristol.
Royal Infirmary
General Hospital
Nurses' Training Institution, Clifton

Cambridge.
Nursing Association, 13, Fitzwilliam Street

Cardiff.
Glamorganshire and Monmouthshire Trained Nurses' Institution

Dover.
Trained Nurses' Institute

Dublin.
City of Dublin Nursing Institution, 27, Upper Baggot Street
Red Cross Nursing Sisters' House, 87, Harcourt Street

Edinburgh.
Training Institution, 13, Stafford St.

Glasgow.
Public Dispensary, 54, Dundas St.
Glasgow Maternity Hospital, North Portland Street

Great Grimsby.
Nursing Institution, 3, Grosvenor Crescent

Harrogate.
Trained Nurses' Institution.

Leamington.
Warneford, Leamington & South Warwickshire Hospital

Leeds.
Nurses' Institute, 21, Hyde Terrace

Leicester.
Institution for Trained Nurses, Aylestone Road

Liverpool.
Nurses' Institute, 70, Hope Street

Maidstone.
Stephen Mockton Nurses' Home, West Kent Hospital

Scarborough.
Trained Nurses' Institute, 1, West Park Terrace

Southport.
Trained Nurses' Home, 3, Crosby Road (East)

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Kent Nursing Institution

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Wodderspoon & Co. 7, Serle Street, W.C.
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Davis, F. A., 40, Berners Street, W.
Fannin & Co. Grafton Street, Dublin
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Gurney & Jackson, 1, Paternoster Row, E.C.
Holden, Adam, 48, Church Street, Liverpool
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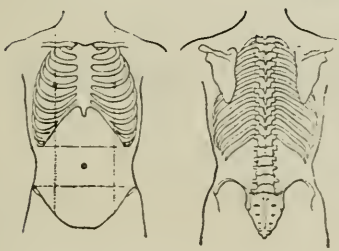

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ST. MARY'S HOSPITAL MEDICAL SCHOOL,
PADDINGTON, W.

HOSPITAL STAFF:—Consulting Physician—Sir Edward Sieveking. Consulting Surgeons—Mr. S. A. Lane, Mr. H. Spencer-Smith. Physicians—Dr. Broadbent, Dr. Cheadle, Dr. Lees. Physicians in charge of Out-Patients—Dr. S. Phillips, Dr. Maeguire, Dr. Luff. Surgeons—Mr. A. T. Norton, Mr. Edmund Owen, Mr. H. W. Page. Surgeons in charge of Out-Patients—Mr. A. J. Pepper, Mr. A. Q. Silcock, Mr. J. E. Lane. Physician-Accoucher—Dr. Braxton Hicks, F.R.S. Physician-Accoucher in charge of Out-Patients—Dr. Montague Handfield-Jones. Ophthalmic Surgeons—Mr. Critchett, Mr. H. Juler. Aural Surgeon—Mr. Field. Surgeon in charge of the Department for Diseases of the Skin—Mr. Malcolm Morris. Physician in charge of the Department for Diseases of the Throat—Dr. Scanes Spicer. Surgeon-Dentist—Mr. Morton Smale. Physician in charge of the Electrical Department—Dr. Cagney. Curator of the Museum—Mr. J. J. Clarke.

OTHER LECTURERS:—Anatomy—Mr. J. E. Lane. Physiology—Dr. Waller. Pathology—Mr. Silcock, Dr. Maguire. Chemistry—Dr. Alder Wright, F.R.S. Medical Jurisprudence—Dr. A. P. Luff. Hygiene and Public Health—Dr. Luff. Botany—Rev. J. M. Crombie, M.A. Medical Tutors—Dr. Phillips and Dr. Luff. Surgical Tutor—Mr. Crowle. Obstetric Tutor—Dr. M. Handfield-Jones. Medical Superintendent—Dr. M. M. Bird. Chloroformist—Mr. H. Davis.

DEMONSTRATORS:—Anatomy—Dr. G. W. Hill, Mr. Roughton, Dr. Cagney. Chemistry—Mr Leon. Science Tutor—Mr. Bottomley.

EXTENSION OF ST. MARY'S HOSPITAL AND SCHOOL.

The land adjoining the Hospital, now covered by 23 houses, has lately been bought, and arrangements are now being made to build—(1) a new Out-patients' Department, and also in separate blocks—(2) a Residental College for Students—(3) new Special Wards—(4) a Nurses' Home, and—(5) well-isolated Wards for Lying-in Women. The latter, now there is a general outcry for the more thorough instruction of medical students in the practice of midwifery, will be a most valuable addition to the facilities for teaching.

This will add 100 beds to the Hospital, making 381 in all.

Their Royal Highnesses the Prince and Princess of Wales have graciously consented to lay the foundation stone of the New Building. The estimated cost of this great addition to the Hospital and School is £100,000.

The School buildings, to which large additions were made in 1883, especially as regards the laboratories, for the teaching of Physiology and Chemistry, have been further enlarged by the addition of a wing containing a new Library, Pathological Laboratory, with arrangements for Bacteriological research; Materia Medica Museum, and various class-rooms for Anatomy, Physiology, and Chemistry. In the Students' Club a large Dining-hall and Reading-room have been added.

The course of teaching at this School insures careful and complete preparation for all the Examining Boards, the Public Services, and the higher University Examinations. In addition to the Clinical instruction and Lectures given in the wards daily, distinct Clinical Lectures are given on Fridays throughout the academical year at 4 p.m.

The MEDICAL, SURGICAL, and OBSTETRIC TUTORS assist the Students in preparing for the final Examinations. Ophthalmic, Aural, and Dental Surgery, Comparative Anatomy, Histology, and Pathology are carefully and systematically taught both by Lectures and practical Demonstrations. There are also departments for the Diseases of Women and Children, of the Eye and Ear, of the Skin, and of the Throat.

Special classes are held for the Preliminary Scientific Examination of the University of London, Fee £10 10s., which will be returned to any member of the class who enters as a perpetual pupil. Gentlemen who enter for this course count their medical studies from the time at which they commence their attendance on the Lectures on Anatomy and Physiology. Practical instruction is given in Hygiene and Public Health.

Special Classes are also held for the Intermediate M.B. of the University of London, and for the F.R.C.S. Examinations.

ENTRANCE SCHOLARSHIPS.

One Scholarship in Natural Science, of the value of 100 guineas, open to any gentleman who has not completed a Winter Session of study at a Medical School.

Three Scholarships in Natural Science, each of the value of 50 guineas, under the same conditions.

One Scholarship of the value of 120 guineas, open to students from Epsom College, being sons of Medical Men, who have not completed a Winter Session of Study at a Medical School.

Two Scholarships, each of 50 guineas, open to Students from the Universities of Oxford, Cambridge, or other University, who have not entered at any London Medical School.

The subjects of Examination for the Natural Science Scholarships will be Inorganic Chemistry, Experimental Physics, and Elementary Biology. The Examination will be conducted according to the Syllabus published in the London University Calendar of 1888, for the Preliminary Scientific M.B. Examination.

The subjects of Examination for the two Scholarships open to Candidates from the Universities will be Anatomy or Chemistry (Organic and Inorganic), Physiology and Histology.

In addition to the Open Entrance Scholarships, Class Prizes, and usual appointments, Scholarships will be offered for competition at the end of each year, open to all pupils of the Hospital.

APPOINTMENTS.

Two Demonstrators of Anatomy are appointed at a salary of £70 a year, and a Junior Demonstrator at a salary of £50 a year. A Demonstrator of Physiology is appointed at a salary of £100 a year. A Demonstrator of Histology at £50 a year. Two Prosectors of Anatomy and two Assistant Demonstrators of Physiology are appointed annually, and receive a certificate and £5 each for satisfactory service in their respective departments.

Three House Physicians, and three House Surgeons, and a Resident Obstetric Assistantship, each tenable for six months.

These Resident Medical Appointments are open to the Pupils without expense of any kind, and are equivalent to Seven Scholarships of the Annual value of £50.

ST. MARY'S HOSPITAL MEDICAL COLLEGE, 33 & 35, Westbourne Terrace.—RESIDENCE FOR STUDENTS.—Students may reside in the College under the supervision of the Warden, Mr. Roughton. Terms: £60 for the Academical year, payable £20 in advance, on October 1st, January 1st, and May 1st, to include Special Instruction by the Demonstrators on three days a week. The Warden will be happy to show the arrangements of the College, or to give any further information concerning it.

For the Prospectus and further particulars apply to the School Secretary, MR. F. H. MADDEN

GEORGE P. FIELD, *Dean.* A. P. LUFF, M.D., *Sub-Dean.*

UNIVERSITY OF DURHAM.

COLLEGE OF MEDICINE, NEWCASTLE-UPON-TYNE.

LICENCES, AND DEGREES IN MEDICINE, SURGERY, AND SANITARY SCIENCE.—Three Licences, and six Degrees are conferred by the University of Durham—viz., Licences in Medicine, in Surgery, and in Sanitary Science: the Degrees of Bachelor in Medicine, Doctor in Medicine, Bachelor in Surgery, and Master in Surgery, Bachelor in Hygiene, and Doctor in Hygiene.

Attendance at the University of Durham College of Medicine during one of the four years of professional study, or subsequently to qualification elsewhere, is required as part of the curriculum for the Degrees, except in the case of Practitioners of more than 15 years' standing, who have attained the age of 40 years, who can obtain the Degree after examination only.

The first two Examinations for the Degree of M B. may be passed prior to the commencement of attendance at Newcastle.

A Candidate who has a recognised qualification, or who has passed the First Examination of the Conjoint Board in England of the Royal College of Physicians of London and the Royal College of Surgeons of England, will be exempt from the First Examination of the University of Durham, except in the subjects of Chemistry with Chemical Physics, and Botany with Medical Botany, in which he will be examined. A qualified Candidate who has passed in the subject of Botany at any Examination by a recognised Licensing Board will be exempt in that subject also.

A Candidate who has passed the First and Second Examinations of the University will be exempt from the First and Second Examinations of the Conjoint Board in England, and will be entitled to present himself for the Final Examination of the Board on the completion of the necessary curriculum.

The Extra Arts Examination must be passed previously to the Candidate's entry for his Third Examination for the Degree.

All information, together with Examination Papers, &c., is given in the Calendar of the University of Durham College of Medicine, Newcastle-upon-Tyne, or may be obtained from the Secretary at the College.

Scholarships, &c.—A University of Durham Scholarship, value £120—for proficiency in Arts, awarded annually to full Students in their first year only. The Dickinson Scholarship, value £15 and a Gold Medal—for Medicine, Surgery, Midwifery, and Pathology. The Tulloch Scholarship, value, the interest of £400—for Anatomy, Physiology, and Chemistry. The Charlton Scholarship, value, the interest of £700—for Medicine. The Gibb Scholarship, value, the interest of £500—for Pathology. The Goyder Memorial Scholarship (at the Infirmary), value, the interest of £325; Luke Armstrong Scholarship, the interest of £680; Stephen Scott Scholarship, the interest of £1000—for Clinical Medicine and Clinical Surgery. At the end of each Session a Prize of Books and Honours Certificates are awarded in each of the regular Classes. An Assistant Curator of the Museum, Assistant Demonstrators of Anatomy, Prosectors, and Assistant Physiologists are elected yearly. Pathological Assistants, Assistants to the Dental Surgeon, Assistants in the Eye Department, Clinical Clerks, and Dressers are appointed every three months.

The Royal Infirmary contains 280 beds. Clinical Lectures are delivered by the Physicians and Surgeons in rotation. Pathological Demonstrations are given as opportunity offers by the Pathologist. Practical Midwifery can be studied at the Newcastle Lying-in-Hospital, where there is an Out-door Practice of about 500 cases annually.

FEES.

(*a*) A Composition Ticket for Lectures at the College may be obtained—

I. By payment of 60 guineas on entrance.

II. By payment of 35 guineas at the commencement of the 1st & 2nd Winter Sessions.

III. By three annual instalments of 30, 25, and 20 guineas respectively, at the commencement of the Sessional year.

(*b*) Fees for attendance on Hospital Practice:—

For three months' Medical and Surgical Practice, 5 guineas.
„ six „ „ „ 8 „
„ one year's „ „ „ 12 „
„ perpetual „ „ „ 25 „

Or by three instalments at the commencement of the Sessional year—viz., First year, 12 guineas; Second year, 10 guineas; Third year, 6 guineas. Or by two instalments—viz., First year, 14 guineas; Second year, 12 guineas.

In addition the Committee of the Infirmary require the payment of 2 guineas from every Student attending the Infirmary for every year up to three years of attendance.

(*c*) Single Courses of Lectures or Tutorial Classes, 5 guineas.

Fees for Lectures, &c., at the College must be paid to the Registrar, and Fees for Hospital Practice to the House Physician at the time of entry.

Further Particulars may be obtained from the Secretary of the University of Durham College of Medicine, Newcastle-upon-Tyne.

University College, Bristol.

MEDICAL SCHOOL.

WINTER SESSION, October 1st. SUMMER SESSION, May 1st.

Lecturers:

Medicine—E. MARKHAM SKERRITT, M.D. Lond., B.S., B.A., F.R.C.P., and R. SHINGLETON SMITH, M.D. Lond., B.Sc., F.R.C.P.
Surgery—N. C. DOBSON, F.R.C.S., and J. GREIG SMITH, M.A., M.B., C.M.
Anatomy—W. H. HARSANT, F.R.C.S.
Practical Anatomy—Demonstrators: W. M. BARCLAY, F.R.C.S., and J. P. BUSH, M.R.C.S.
Physiology—Lecturer, G. M. SMITH, M.R.C.S.; Assistant Lecturer, J. M. CLARKE, M.A., M.B. Cantab., M.R.C.P.
Chemistry—T. COOMBER, F.C.S.
Hygiene—D. S. DAVIES, M.B. Lond., D.P.H. Cantab.
Midwifery and Diseases of Women—J. G. SWAYNE, M.D. Lond., and A. E. AUST LAWRENCE, M.D.
Medical Jurisprudence—R. EAGER, M.D. Lond., and A. J. HARRISON, M.B. Lond.
Pathology and Morbid Anatomy—BARCLAY J. BARON, M.B., C.M. Edin.
Practical Pathology and Morbid Anatomy—BARCLAY J. BARON, M.B., C.M. Edin.
Operative Surgery—C. F. PICKERING, F.R.C.S.
Practical Surgery—A. W. PRICHARD, M.R.C.S.
Materia Medica and Therapeutics—A. B. PROWSE, M.D. Lond., F.R.C.S.
Practical Physiology and Histology—G. F. ATCHLEY, M.B. Lond.
Physiological Assistant—D. C. RAYNER.
Botany—Prof. A. LEIPNER.
Practical Chemistry—T. COOMBER, F.C.S.
Comparative Anatomy—Prof. C. LLOYD MORGAN.
Medical Tutor—C. A. GRIFFITHS, M.R.C.S.

Composition Fee for Lectures, 60 guineas or 50 guineas.

HOSPITAL PRACTICE may be attended either at the Bristol Royal Infirmary, or at the Bristol General Hospital.

FEES (including Clinical Lectures)—Infirmary: Perpetual Medical and Surgical Practice, 20 guineas each, or in one payment, 35 guineas. Hospital: Perpetual Medical and Surgical Practice, £20 each, or in one payment, 35 guineas.

SCHOLARSHIPS AND PRIZES.—Numerous valuable Scholarships and Prizes are offered by the Medical School, and by the Infirmary and the Hospital.

SPECIAL SIX MONTHS' COURSE FOR DIPLOMA IN PUBLIC HEALTH.

1.—Lectures on Hygiene—D. S. Davies, M.B. Lond., D.P.H. Cantab.
2.—Laboratory Course of Hygienic Chemistry and Bacteriology—W. W. Stoddart.
3.—Demonstrations on the various Acts, Orders, By-laws, &c.—J. C. Heaven, M.R.C.S., D.P.H. Lond.
4.—Practical Out-door Sanitary Work—D. S. Davies, M.B. Lond., D.P.H., M.O.H.

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E. MARKHAM SKERRITT, M.D., *Dean.*

Medical School, University College, Tyndall's Park, Bristol.

UNIVERSITY OF EDINBURGH.

FACULTY OF MEDICINE.—WINTER SESSION.

The Winter Session begins in October.

Materia Medica	Prof. T. R. Fraser, M.D.
Chemistry	Prof. Crum Brown, M.D.
Surgery	Prof. Chiene, M.D.
Institutes of Medicine or Physiology	Prof. Rutherford, M.D.
Midwifery and Diseases of Women and Children	Prof. Simpson, M.D.
Clinical Surgery (Mon. & Th.)...	Prof. Annandale, M.D.
Clinical Medicine (Tu. & Fr.) ...	Profs. Grainger Stewart, Fraser, & Greenfield; & Simpson on Diseases of Women.
Anatomy	Prof. Sir William Turner, M.B.
Practice of Physic...	Prof. Grainger Stewart, M.D.
General Pathology	Prof. Greenfield, M.D.
Botany	Prof. Balfour, M.D.
Natural History	Prof. Ewart, M.D.

LECTURERS.—Clinical Instruction on Diseases of Children, James Carmichael, M.D., and John Playfair, M.B.; Comparative Embryology, George Brook.

SUMMER SESSION.

The Summer Session commences at the beginning of May.

Botany, Prof. Balfour. Medical Jurisprudence, Prof. Sir Douglas Maclagan.
Clinical Medicine, Profs. Grainger Stewart, Fraser, and Greenfield; and Prof. Simpson on Diseases of Women.
Clinical Surgery, Prof. Annandale.
Chemistry (Advanced Class), Prof. Crum Brown. Natural History, Prof. Ewart.

LECTURERS.—Mental Diseases, T. S. Clouston, M.D.; Diseases of the Eye, D. Argyll Robertson, M.D.; Clinical Instruction on Diseases of Children, James Carmichael, M.D., and J. Playfair, M.B.; Comparative Embryology, G. Brook.

Practical Instruction is afforded in Laboratories, furnished with all the necessary appliances, and in Tutorial and Practical Classes in connection with the above chairs, under the superintendence of the Professors.

A copy of the Regulations for Graduation in Medicine and Surgery may be had on application to the Clerk of the University, or to the Dean of the Faculty of Medicine.

UNIVERSITY OF EDINBURGH, *December*, 1891.

JOHN KIRKPATRICK, *Secretary of Senatus.*

Royal College of Surgeons of Edinburgh.

FOUNDED 1505.

Copies of the Regulations for the Fellowship, Licence, Diploma in Public Health, and Licence in Dental Surgery, with dates of Examinations for year 1891-92, are now ready, and may be had on application to

JAMES ROBERTSON, Solicitor, 1, GEORGE SQUARE, EDINBURGH, Clerk to the College.

St. Mark's Hospital

FOR

FISTULA AND OTHER DISEASES OF THE RECTUM,

CITY ROAD, LONDON, E.C.

FOUNDED 1835.

Physician:

F. DE HAVILLAND HALL, Esq., M.D., 47, Wimpole Street, W.

Surgeons:

ALFRED COOPER, Esq., F.R.C.S., 9, Henrietta Street, Cavendish Square.

DAVID HENRY GOODSALL, Esq., F.R.C.S., 17, Devonshire Place, Upper Wimpole St., W.

Assistant Surgeons:

F. SWINFORD EDWARDS, F.R.C.S., 55, Harley Street, Cavendish Square, W.

HERBERT WM. ALLINGHAM, F.R.C.S., 25, Grosvenor Street, Grosvenor Square.

The days for attendance of Out-patients are Wednesdays for Males, at a Quarter before Nine in the morning. Thursdays for Females, at the same time.

Operations take place on Tuesdays, at Two o'clock in the afternoon.

The Practice of this Hospital is free to Medical Men and Students.

Clinical Instruction is given by the Surgeons both in the Out-patient Department and in the Wards. During the past year, 330 In-patients were admitted, and 1918 Patients were treated in the Out-patient Department.

For further particulars apply to ARTHUR LEARED, *Secretary.*

ST. PETER'S HOSPITAL

For Stone, Stricture, and Urinary Diseases, &c.

ESTABLISHED 1860.

HENRIETTA STREET, COVENT GARDEN, W.C.

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Surgeons—

F. R. HEYCOCK, Esq., F.R.C.S.
F. SWINFORD EDWARDS, Esq., F.R.C.S.
E. HURRY FENWICK, Esq., F.R.C.S.
REGINALD HARRISON, Esq., F.R.C.S.

Resident Medical Officer—F. X. DA COSTA, Esq., F.R.C.S.

ST. PETER'S HOSPITAL is intended for Persons of both Sexes suffering from Stone in the Bladder and other Diseases of the Genito-Urinary Organs.

The Practice of the Hospital is free to Medical Men and Students.

The Hospital contains 24 beds, and 3 Private Wards for Paying Patients

The number of In-Patients treated during the last twelve months was **344**; **4393** Out-Patients, New Cases; **30,684** Attendances. All Patients seen without letter or recommendation.

Attendance Daily at 2, except Wednesday and Saturday; Monday, Wednesday and Saturday Evenings at 5; Fridays at 2, Women and Children only.

Clinical Arrangements.—Clinical Instruction in the Wards and Out-Patient Department is given at the following times, when the attendance of Practitioners and Students is invited:—

Monday, 2 till 3, Mr. REGINALD HARRISON, F.R.C.S.; Tuesday, 2 till 3, Mr. HEYCOCK, F.R.C.S; Thursday, 2 till 3, Mr. F. SWINFORD EDWARDS, F.R.C.S.; Saturday, 4 till 7, Mr. E. HURRY FENWICK, F.R.C.S. Consultations will be held and operations performed on Wednesday at 2, and on Friday at 2.

A Donation of Ten Guineas constitutes a Life Governor; a Subscription of One Guinea an Annual Governor. Subscriptions and Donations will be thankfully received by Messrs. BARCLAY, BEVAN & Co., 54, Lombard St., E.C.; Messrs. HOARE & Co., 37, Fleet St., E.C.

WALTER E. SCOTT, *Secretary.*

Yorkshire College, Leeds—Medical Department.

HOSPITAL STAFF.

Consulting Physician—T. Clifford Allbutt, M.A., M.D., F.R.S., F.R.C.P.
Consulting Surgeons—C. G. Wheelhouse, F.R.C.S.; T. Pridgin Teale, M.A., M.B., F.R.S., F.R.C.S.; T. R. Jessop, F.R.C.S.
Physicians—J. E. Eddison, M.D.; T. Churton, M.D.
Surgeons—E. Atkinson, F.L.S.; A. W. Mayo Robson, F.R.C.S.; E. Ward, M.A., M.B., B.C.; W. H. Brown, F.R.C.S.I., M.R.C.S.
Ophthalmic and Aural Surgeons—John A. Nunneley, M.B.; H. Bendelack Hewetson, M.R.C.S.
Obstetric Physician—James Braithwaite, M.D.
Assist. Physicians.—A. G. Barrs, M.D., M.R.C.P.; E. H. Jacob, M.A., M.D.
Assistant Surgeons—R. N. Hartley, M.B., B.S., Lond.; Harry Littlewood, F.R.C.S.
Assistant Ophthalmic and Aural Surgeon.—H. Secker Walker, F.R.C.S.
Dental Surgeon—T. Carter, L.D.S.

PROFESSORS, LECTURERS AND DEMONSTRATORS.

Medicine—Prof. J. E. Eddison, M.D., Senior Physician Leeds Infirmary; T. Churton, M.D., Physician Leeds Infirmary. Surgery—Prof. A. W. M. Robson, F.R.C.S., Surgeon Leeds Infirmary. Practical Surgery—E. Ward, M.A., M.B., B.C., Surgeon Leeds Infirmary. Descriptive, Applied, and Practical Anatomy—Prof. T. W. Griffith, M.D., C.M., Physician to Leeds Public Dispensary. Lecturer on Osteology—Edmund Robinson, M.R.C.S. Practical Anatomy—Demonstrator: E. Fawcett, M.B., C.M. Honorary Demonstrators: G. L. Wells, M.B., B.S., F.R.C.S., Surgeon Leeds Public Dispensary, H. A. Smith, L.R.C.P., M.R.C.S. Physiology, Practical Physiology and Histology—Prof. De Burgh Birch, M.D., C.M., F.R.S.E. Demonstrator: A. Clarkson, M.B., C.M. Pathology and Morbid Histology—Prof. E. H. Jacob, M.A., M.D., Assistant Physician Leeds Infirmary. Midwifery—Prof. C. J. Wright, M.R.C.S., Senior Surgeon Leeds Hospital for Women and Children. Diseases of Women and Children—J. B. Hellier, M.D., Surgeon Leeds Hospital for Women and Children. Forensic Medicine—T. Scattergood, M.R.C.S., Consulting Surgeon Leeds Hospital for Women and Children; C. M. Chadwick, M.A., M.D., M.R.C.P., Senior Physician Leeds Public Dispensary. Demonstrator of Practical Toxicology—Julius B. Cohen, Ph.D. Materia Medica, Pharmacology, and Therapeutics—A. G. Barrs, M.D., M.R.C.P., Assistant Physician Leeds Infirmary. Demonstrator of Practical Pharmacy—F. W. Branson, F.I.C. Chemistry and Practical Chemistry—Prof. A. Smithells, B.Sc. Demonstrator: H. Ingle, F.I.C. Biology, Botany, and Comparative Anatomy—Prof. L. C. Miall, F.L.S., F.G.S. Physics—Prof. W. Stroud, D.Sc., B.A. Operative Surgery—E. Ward, M.A., M.B., B.C., Surgeon Leeds Infirmary. Ophthalmology—J. A. Nunneley, M.B., Senior Ophthalmic and Aural Surgeon Leeds Infirmary. Mental Diseases—W. Bevan Lewis, L.R.C.P., M.R.C.S., Medical Director West Riding Asylum, Wakefield. Hygiene and Public Health—R. N. Hartley, M.B., B.S., Assistant Surgeon Leeds Infirmary.

The Lectures and Hospital Practice qualify Students for the various Examining Boards. Students can enter for the Hospital Practice, or the Lectures, or for a Single Course of Lectures separately.

The Infirmary, in which the Medical and Surgical Practice is conducted, has an average of 290 In-Patients. Senior Students are selected, according to merit, for several Resident Appointments. The Dispensary, the Fever Hospital, the Hospital for Women and Children, and the West Riding Asylum at Wakefield, are also open to Students. The Prospectus and further information may be obtained from the Registrar of the College.

THE LONDON ASSOCIATION OF NURSES.

Chief Office—123, NEW BOND STREET, W.
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Superior Hospital-trained Nurses for Medical, Mental, Monthly, Surgical, Fever, and Small-pox Cases, are always in readiness; also Male Attendants, Male Nurses, and Medical Rubbers. In this Association the Nurses are not paid by small salaries, but after a year's probation receive their earnings.

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In connection with the Association there are "Home Hospitals," where Patients can be received under the care of their own Physicians, each Patient being provided with a separate room.

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123, *New Bond Street, London, W.*

UNIVERSITY OF ABERDEEN.

FOUNDED 1494.

FACULTY OF MEDICINE.

THE Degrees in Medicine granted by the University are—Bachelor of Medicine, Master in Surgery, and Doctor of Medicine. They are conferred only after Examination, and only on Students of the University. A Diploma in Public Health is conferred after Examination on Graduates in Medicine of the University.

The Faculty of Medicine embraces eleven chairs, from which instruction is given in all the main branches of Medical Science, viz.:—ANATOMY, Prof. R. W. Reid; NATURAL HISTORY, Prof. Alleyne Nicholson; BOTANY, Prof. James W. H. Trail; CHEMISTRY, Prof. Japp; PHYSIOLOGY, Prof. McWilliam; MATERIA MEDICA, Prof. Cash; PATHOLOGY, Prof. Hamilton; PRACTICE OF MEDICINE, Prof. Finlay; SURGERY, Prof. A. Ogston; MIDWIFERY, Prof. Stephenson; and MEDICAL JURISPRUDENCE, Prof. Hay.

Practical Classes in connection with the above chairs are conducted by the Professors, in Laboratories furnished with all the necessary appliances; and opportunities are afforded to Students and Graduates to extend their practical knowledge and engage in original research.

Instruction is also given in special departments of Medical Practice by Lecturers appointed by the Senatus.

Clinical Instruction is obtained in the Royal Infirmary (accommodating 200 patients), Royal Lunatic Asylum (accommodating 600 patients), the Sick Children's Hospital (accommodating 75 patients), the City [Fever] Hospital (accommodating 100 patients, the General Dispensary and Lying-in and Vaccine Institutions (with 10,000 out-patients annually), and the Ophthalmic Institution (with 800 patients annually).

Bursaries, Scholarships and Fellowships, to the number of 41, and of the annual value of nearly £1,000 may be held by students in this Faculty.

The cost of Matriculation, Class, and Hospital fees for the whole curriculum, exclusive of the fees for the Degrees, is usually about £80.

A prospectus of the classes, fees, &c., together with the regulations for Graduation in Medicine and Surgery, may be had on application to the *Dean* of the Faculty of Medicine.

Full and official information regarding the University, the Courses of Instruction given, Degrees granted in Arts, Divinity and Medicine, Conditions of the Bursaries, Scholarships, and the Examination Papers will be found in the UNIVERSITY CALENDAR, which can be procured from Messrs. A. KING & Co., University Printers, Aberdeen. Price 2s.; by post, 2s. 4d.

WILLIAM STEPHENSON, M.D., *Dean of Medical Faculty.*

ROTUNDA LYING-IN HOSPITAL,

DUBLIN.

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Assistant Physicians:

ROBT. A. FLYNN, L.R.C.S.I., L. and L.M.K., and Q.C.P.I.
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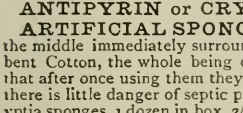

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HAZELINE.—This is water-like in appearance, and is distilled from the fresh leaves, twigs, and young bark of the Hamamelis Virginica. It possesses pronounced anodyne and soothing properties, and is extensively employed with excellent effect in various hæmorrhages. For internal use it is taken in doses of from ½ to 2 drachms with water. It has the advantage over other astringent remedies in being entirely non-poisonous. Applied locally to an oozing surface on a pad of lint, or Lawton's Absorbent Cotton, it quickly causes astringence of the

MODERN PHARMACY (continued)—

vessels and stops the bleeding. It is much liked for use in uterine hæmorrhage, especially in menorrhagia and metrorrhagia. In such cases the vagina can be plugged with a tampon saturated with Hazeline. In inflammation of the conjunctiva it is employed as a lotion mixed with an equal quantity of tepid water. It affords excellent results in coryza, ozœna, and inflamed or irritable conditions of the nasal mucous membrane. It may be used with advantage as a gargle for relaxed sore throat, as a mouth wash for aphthæ or spongy gums, or to stop hæmorrhage from a bleeding socket after extraction of a tooth. Hazeline is supplied in ½ and 1 pound bottles, at 1/2 and 3/6 each.

HAZELINE CREAM (Unguentum Hazelini, B. W. & Co.).—This ointment is of cream-like consistence, and combines the anodyne and astringent properties of Hazeline, with the soothing and emollient action of Lanoline. It is clean to use, and is much liked by the profession as an application in hæmorrhoids, pruritus ani, or vulvæ, and in irritable conditions of the cuticle. For internal piles it may be employed with the Ward Cousins' Ointment Injector, which see. Hazeline Cream is supplied in 2 ounce jars and 1 pound bottles, at 1/2 and 5/- each.

HYPODERMIC "TABLOIDS" (B. W. & Co.).—These "Tabloids" are very soluble, accurate in composition, and keep perfectly for an indefinite period. The smaller "Tabloid" will dissolve and make a clear solution in 3 to 5 minims of water, the larger ones require from 5 to 10 minims of water. The physician readily recognises the advantages of having a perfectly fresh solution for subcutaneous injection. Stock solutions of alkaloids, glucosides, and delicate active principles readily decompose or become prone to growths of low organisms, and it has often occurred in general practice that local septic poisoning has been caused by the injudicious injection of a solution containing morbid growths of different penicilium. The tubes of the "Tabloids" fit into small and handy little pocket cases, enabling the physician to carry quite an armamentarium of active remedies about his person. The Hypodermic "Tabloids" may be either administered by the mouth or subcutaneously as indications arise. The following is a list of the Hypodermic "Tabloids."

LIST OF HYPODERMIC "TABLOIDS."

	Each.
Aconitine, Nitrate Crystalline,	1-260 gr.
Apomorphine Hydrochlorate	1-10 and 1-15 gr.
Atropin Sulphate	1-150, 1-100, and 1-60 gr.
Caffeine Sodio Salicylate	1-2 gr.
Cocaine Hydrochlorate	1-6, 1-2, 1-4 gr.
Codeine Phosphate	1-4 gr.
Colchicin	1-100 gr.
Cornutin Hydrochloride	1-60 gr.
Curare	1-12 gr.
Digitalin Crystalline	1-100 gr.
Ergotinin Citrate	1-100, 1-200 gr.
Eserine Salicylate	1-100 gr.
Homatropine Hydrochlorate	1-250 gr.
Hydrarg. Perchlor.	1-30, 1-60 gr.
Hyoscine Hydrobromate	1-200, 1-75 gr.
Hyoscyamine Sulphate	1-80, 1-20 gr
Morphine Bi-Meconate	1-8, 1-6, 1-4, 1-3 gr.
Morphine Hydrochlor.	1-4 gr.
{Morphine Sulphate 1-12, 1-8, 1-6, 1-4, 1-3, 1-2 gr. {Atropine Sulphate 1-250, 1-200, 1-180, 1-150, 1-120, 1-100 gr.	
Pilocarpine Hydrochlorate	1-10, 1-3 1-2 gr.
Quinine Hydrobromate	1-2 gr.
Sclerotinic Acid	1-2, 1 gr.
Sparteine Sulphate	1-2 gr.
Strophanthin	1-500 gr.
Strychnine Sulphate	1-150, 1-100, 1-60 gr.

(New Formulæ are constantly being added to this List.)

The Hypodermic "Tabloids" are supplied in tubes, excepting the following, 20 in each tube at 1/- per tube. 43, 40, 54, 53, 1, 48, 31, 41, 7, 33, 32, 42, 21, 20 and 56, these latter hold 12.

ICHTHYOL.—This substance is prepared by distilling, and subsequently neutralizing the distilled product of bitumen found in the Tyrol. Ichthyol is employed with excellent effects in many skin diseases, notably, amongst others, chronic eczema, impetigo, intertrigo furuncles, acne rosacea; also in various inflammatory diseases of the uterus and its appendages. It is either employed externally in the form of an ointment or mixed with Collodion; or it is taken internally in the forms of pills and capsules. Pil. Ichthyolici 1½ grains (B. W. & Co.). Capsulæ Ichthyolici 4 minims (B. W. & Co.). Ichthyol taken internally is said to reduce tension of the capillary vessels, thus subduing inflammation. Externally, Unguentum Ichthyolici (B. W & Co.), and the Ichthyol Soap, 10 per cent. super-fatted with Lanoline, are excellent preparations. Ichthyol is supplied in 1 ounce bottles at 1/4 each, and in ½ pound, 1 pound, and 2 pound tins, at 15/- per pound. Ichthyol Capsules (B. W. & Co.), in bottles of 50, at 2/3 per bottle; Ichthyol Pills, sugar coated, in bottles of 100, at 2/3 per bottle; Ichthyol Soap, at 8d. per cake. Ichthyol Ointment in collapsible tubes, 2 oz. at 1/2 each.

INHALERS.—See Chloride of Ammonium Inhaler (Vereker), the portable pipe Chloride of Ammonium Inhaler, the Pinol Eucalyptia dry Inhaler, the Oro-Nasal Menthol Inhaler, the Menthol pocket Inhaler and Wallich's Improved Inhaler.

IODIC HYDRARG.—This new antiseptic and germicide is a chemical combination of Iodine and Mercury. It is practically unirritating, is very soluble in water, does not precipitate albumen, and possesses double the bactericidal strength of Corrosive Sublimate, is much less toxic than the latter and may be employed with safety for the irrigation of wounds, etc., in the strength 1 in 4,000. In 1 oz. bottles, 1/3 each.

MODERN PHARMACY (continued)—

KEPLER EXTRACT OF MALT is considered to be one of the most palatable vehicles for the administration of nauseous or disagreeable remedies. It facilitates the absorption of the incorporated medicaments, and can be administered without detriment in diabetic or gouty and rheumatic conditions. This preparation contains all the "force-producing" and "tissue-forming" elements of malted barley in an agreeable and concentrated form. It contains a large proportion of vegetable diastase, which converts starch into soluble dextrines and maltose. The remaining proportions of the Extract consist of *dextrines*, considered as peptogens in that they promote the full flow of the gastric secretions (Schiff), easily assimilated carbo-hydrates (Maltose), and the tissue building principles, albumen and vegetable casein. The mineral salts in the Kepler Extract of Malt are considered very important by some as a natural chemical food, these amount to about 3 per cent. of the total weight. Considered then from a therapeutic point of view the Kepler Extract of Malt is:

1. A valuable digestive adjunct.
2. It furnishes those agents for a plentiful supply of warmth-giving and tissue-forming elements.
3. It stimulates the digestive functions and assists them in promoting assimilation.

It is, therefore, an excellent dietetic remedy in *consumption*, *constipation*, *diarrhœa*, *rickets*, *scrofula* and in every condition of *malnutrition* and *exhausting disease*, *general debility*, and *overwork*.

The Kepler Extract of Malt is delicious as honey, children like it spread on bread, it is an excellent sweetening agent for porridge, milk puddings, and farinaceous foods. Mixed with milk or aerated waters, it makes a delightful and healthy drink for invalids, or those abstaining from alcohol.

THE KEPLER SOLUTION OF COD LIVER OIL IN EXTRACT OF MALT.—Bearing in mind the cogent fact that it is really the amount of oil *assimilated*, and not the quantity *ingested*, that is of value in wasting diseases, it is at once understood that the intention of the Kepler Solution is to afford the medical practitioner the means for ensuring perfect absorption of the fat taken. The digestibility of a fat depends entirely upon the five subdivisions of its particles, otherwise the fat splitting and emulsifying ferments of the pancreas and intestinal glands have no chance of acting upon it. In the case of the Kepler solution, the Oil is absolutely dissolved in an important concentrated nutrient and digestive agent, that is the Kepler Extract of Malt, and it is an undoubted fact that cod liver oil taken in this manner is perfectly utilized by the economy. In conjunction with the force-giving and fattening properties of the Oil, we have the desirable digestive assistance rendered by the Malt Extract; the albuminoids and vitalising phosphates act as an important food for muscle, bone, and brain, and it is of the greatest benefit in wasting diseases, as marasmus, consumption, scrofula, and general debility. The *Lancet* says, "It has hardly any taste of the oil; many take it easily who cannot take the Oil." The *British Medical Journal* reports, "It is an ideal form for the administration of fat."

LANO-CREOLIN.—This is a useful antiseptic ointment containing 10 per cent. of Creolin with Lanoline, and is much liked for use in midwifery practice. Supplied in collapsible tubes, at 10d. per tube.

"LANOLINE."—This has now become thoroughly recognized as one of the most useful additions to the Materia Medica. It affords a most convenient and reliable basis for ointments, never becomes rancid, and may be mixed with 33 per cent. of water or watery solution. It promotes penetration of the incorporated medicament into the cutaneous and adjacent tissues. It is natural to the sebaceous glands as proved by Professor Liebreich in his experiments upon the human vernix caseosa.

Several toilet preparations are now prepared with Lanoline, and they possess decided advantages over similiar products made with glycerine fats.

LANOLINE COLD CREAM, and **LANOLINE POMADE, TOILET LANOLINE,** packed in collapsible metal tubes, **TOILET LANOLINE SOAP** containing an extra amount of unsaponified Lanoline. This soap is pleasantly soothing and emollient, thoroughly cleanses the skin and is agreeable to use. Lanoline Cold Cream and Lanoline Pomade are supplied in opal pots at 1/2 each. Toilet Lanoline in tubes at 6d. and 1/- each. Lanoline Eucalyptia Soap, Lanoline Ichthyol Soap, Lanoline Pinol Soap and Lanoline Toilet Soap are supplied in cakes at 8d. each. Lanoline Mercurial Ointment 33⅓ per cent. of Mercury, at 4/6 per lb.

MEDICAL POCKET CASES and CARRIAGE CASES, are supplied in all sizes, made with a large variety of material. These cases vary from a small pocket case holding 5½ ounce bottles, and the carriage case containing 40 bottles of varying sizes.

MENTHOL POCKET INHALER.—A portable and antiseptic Inhaler for the inhalation of air saturated with Menthol.

MODERN PHARMACY (continued)—

ORO-NASAL MENTHOL INHALER.—This is fitted with a forked tube enabling the patient to inhale the mentholized air by the nares. Menthol pocket inhalers are supplied at 1/- each ; and the Menthol Oro-Nasal Inhaler at 3/- each.

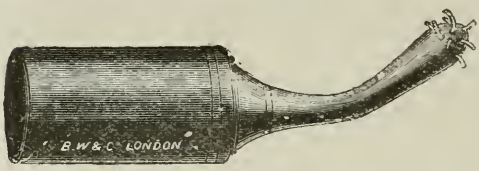
PAROLEINE.—An odourless and tasteless oil which cannot become rancid. It is an excellent solvent for essential oils, Camphenes, Salol, and Iodoform.

PINOL. (Oleum Pini Pumilionis Essent.).—This possesses valuable aromatic, stimulant, and antiseptic properties. A few drops may be sprinkled on the pocket handkerchief, or be used with steam, etc., for inhalation. Pinol is supplied in ½ ounce and 1 ounce bottles, at 1/3 and 2/- each.

PINOL EXTRACT.—Thoroughly miscible with water, is extensively employed in the preparation of baths in chronic skin diseases, rheumatism, sciatica, etc., supplied in 3-ounce bottles at 9d. each. Each bottle contains sufficient for mixing with water to make a good sized bath.

PRESCRIPTION BOOKS (B. W. & Co.).—These are very convenient duplicate prescription books of a suitable size to carry in the pocket. They enable the physician to retain a copy of the prescription issued for his own information, and being economical in price they are much in favour of the medical profession. B. W. & Co. Prescription Books, each containing 50 forms for prescriptions, are supplied to the profession at 2/- per dozen books.

RECTAL INJECTORS (Dr. Ward Cousins').—The Ointment Injector consists of a cylinder and an anal tube. The ointment is filled into the cylinder, and is forced through several orifices in the apex of the tube by pressure being made upon the base of the cylinder. The instrument is made of vulcanite, and consequently does not become saturated with fat or disagreeable for use. The fluid injectors consist of india-rubber bulbs, containing exactly either 3 or 6 drachms of fluid. They are filled by suction and the anal tube is attached. These instruments are very convenient for the patient to use and enable the physician to indicate the exact quantity of a fluid for each injection. The Rectal Injectors (B. W. & Co.) are supplied to the profession at 3/- each.



SACCHARIN.—The sweetening properties of Saccharin are well known. It is of the greatest value as a sweetening agent when sugars are contraindicated, as in glycosuric conditions or gouty diathesis. Saccharin exerts mild antiseptic properties in the intestinal tract, and is of decided value in the treatment of cystitis. Saccharin is supplied in the form of tiny "Tabloids" each containing sufficient to sweeten a large cup of tea or coffee, etc., and also as soluble Saccharin. This contains sufficient soda to dissolve the Saccharin, and is supplied in small oval bottles suitable for carrying in the vest pocket, fitted with a small spoon, holding just sufficient Saccharin to be a substitute for an ordinary sized lump of sugar. Saccharin "Tabloids" are supplied in bottles of 100 and 200 at 8d. and 1/2 per bottle. Soluble Saccharin is supplied in ¼ ounce bottles and 1 ounce bottles, at 1/2 and 3/10 each.

SALODENT.—This is a pleasant aromatic and antiseptic mouth wash, containing Salol, Eugenol and various aromatics. It removes fœtor of the breath, and is effective in preventing caries of the teeth. Supplied in bottles with sprinklers at 1/2 each.

SALOL IN CRYSTALS.—Salol has been extensively employed as a substitute for Iodoform in the treatment of wounds. It is of the greatest value also as an antipyretic, and also for producing local antisepsis in the alimentary and urethral canals. It is considered especially useful in the treatment of fermentative diarrhœa, typhoid fever, etc., as it passes intact through the stomach and is decomposed by the alkaline secretion in the intestines. Salol is supplied in 1 ounce bottles at 1/3 per ounce, and in 1 pound packages, at 16/10½ per lb.

SODIUM DITHIO-SALICYLATE, is said to give excellent results in the treatment of rheumatoid arthritis, gonorrhœal arthritis, in doses of from 3 to 6 grains. It has been employed by Lindenborn as an effective substitute for the simple salicylates. He considers it does not cause the tinnitus characteristic of the other drugs. Dithio-Salicylate of Soda is supplied in 1 ounce bottles at 2/3 per ounce, also in "Tabloids" each containing 3 grains.

STROPHANTHUS TINCTURE.—This is prepared according to the original formula of Dr. Fraser. It is standardized, so that uniform results are ensured. This Tincture may be administered diluted with water or in the convenient form of "Tabloids" each containing 2 minims. Strophanthus Tincture is supplied in ½ ounce, 1 ounce, and 1 pound bottles, at 4d., 6d. and 6/- each, and Strophanthus Tincture "Tabloids" are supplied in bottles of 50 and 100, at 9d. and 1/4 each.

MODERN PHARMACY (continued)—

"*TABLOIDS*" *of Compressed Drugs.*—Each "Tabloid" contains a definite amount of the medicament, and is prepared with due consideration as to the therapeutic indication for each particular drug. Those intended for local effect on the mouth and fauces dissolve slowly on the tongue and thus bring a concentrated solution of the drug in the saliva into intimate contact with the mucous membrane. "Tabloids" of comparatively insoluble drugs are prepared with very fine powder in such a manner that they will quickly disintegrate in the stomach to a powder and thus ensure perfect absorption. Those "Tabloids" of soluble drugs are compressed, so that they will dissolve readily in water for the extemporaneous preparation of draughts. "Tabloids" afford the physician the means for prescribing a definite amount of a medicament, and so ensure positive and uniform therapeutic effect. The advantages attending the employment of a lightly compressed powder in the dry form as compared with a pill containing the active ingredient held together with some tenacious excipient which becomes hard and insoluble by age, are distinctly apparent. The following is a list of the "Tabloids" more generally prescribed by physicians. *They are dispensed by all chemists in any quantity indicated and with plain labels according to the directions given in the physician's prescription.*

TABLOIDS & TINCTURES prepared by BURROUGHS, WELLCOME, & CO.

Aloin, gr. 1-10.
Ammon. Bromid., grs. 5, vel grs. x.
Ammon. Chloridi, grs. 3, grs. 5, vel grs. x.
Ammon. Chloridi, et Boracis.

Anti-Constipation: ℞ Aloin, gr. 1-5. Strych. Mur. gr. 1-60. Ext. Bellad. gr. 1-8. Pulv. Ipecac. gr. 1-16.

Antifebrin, grs. 2.
Atim. Tart. gr. 1-50.
Antipyrini, grs. 5.
Apomorph. Mur., gr. 1-50.
Acid Arseniosi, gr. 1-100, vel gr. 1-50.
Atropin Sulph. gr. 1-100.
Bismuth Subnit. atis, grs. 5, vel grs. 10.
Boracis, grs. 5.
Caffeine Cit., grs. 2.
Calci Sulphidi, gr. 1-10.
Cascara Sagrada Ext., grs. 2.

Cascara Comp.: ℞ Ext. Casca. Sag. Sic., gr. 1. Euonymin, gr. ½. Ext. Nucis Vom., gr. 1-16.

Cathartic Comp.
Carbonis Ligni.
Chloral Hyd., grs. 5, vel grs. 10.
Cretæ Aromat. cum Opio, grs. 5.
Digitalin, gr. 1-100.
Euonymin, gr. 1-8.
Ferri et Quinine Cit., grs. 3.
Ferri Redact., grs. 2.

Hydrastis Comp.: ℞ Hydrastis Mur. gr. ½. Ergotin, gr. ½. Cannabin Tannate, gr. ½.

Hydrarg. cum Creta, gr. ½, gr. 1-3, gr. ½, et gr. 1.
Hydrarg. Pil. grs. 3.
Hydrarg. Iod. Rub. gr. 1-20.
Hydrarg. Iod. Vir. gr. 1-8.
Hydrarg. Perchlor. gr. 1-100.
Hydrarg. Subchlor. gr. 1-10, gr. ½, et gr. 1.
Ipecac. et Opii. grs. 5, vel gr. ½.
(Dover's Powder).
Ipecac. Pulv. grs. 5.
Laxative Vegetable
Lithia Carbonat., grs. 2.
Manganes. Dioxid., grs. 2.
Morphine Sulph., gr. 1-8, vel gr. 1-20.
Nitro-glycerini, gr. 1-100.
Opii. Pulv., gr. 1.
Pancreatin *vide* Zymin.
Papain, grs. 2.
(Dr. Finkler & Co.).
Pepsin (Fairchild) gr. 1.
Pepsin Saccharata, grs. 5.

Peptonic: ℞ Pepsin. Zymin. Calcii Lactophosph. p. aeq. ad. grs. 5.

Phenacetin, grs. 5.
Pilocarpini Mur., gr. 1-20.
Podophyllin, gr. 1-4.
Potass Bicarb., grs. 5.
Potass Bromid., grs. 5 vel grs. 10.
Potass Chlorat., grs. 5.
Potass Chlorat., et Boracis.
Potass Chlor., cum Boraci. et Cocaina.
(Voice Tabloids).
Potass Iodid., grs. 5.
Potass Nitrat., grs. 5.
Potass Permanganat., gr. 1, vel gr. 2.
Quinine Bisulph, gr. ½, gr. 1, grs. 2, grs. 3, grs. 5.
Rhei. Co. Pil., grs. 3.
Rhei. Co. Pulv., grs. 5

Rhei. et Soda Bicarb.: ℞ Pulv. Rhei. grs. 5. Soda Bicarb., grs. 2. Pulv. Zingib. gr. ½.

Rhei. Rad. Pulv., grs. 3.
Saccharini, gr. ½.
Salicin, grs. 5.
Salol. grs. 5.
Santonin, gr. ½.
Sodæ Bicarb., grs. 5.

Soda Mint: ℞ Soda Bicarb., grs. 4. Ammon. Carb., gr. ½. Ol. Menth. Pip., gr. ½.

Soda Salicylat. grs. 3 vel grs. 5.
Sulphonal, grs. 5.

Sulphural Co.: ℞ Sulphur Precip. grs. 5. Potass Bitart. gr. 1.

Test Tabloids (Fehling's).
Tannin grs. 2½.
Tinct. Aconiti, min. 1.
„ Bellad. min. 1.
„ Capsici, min. 1.
„ Digitalis, min. 1.
„ Opii, min. 2.
„ Strophanthi, min. 2.
„ Warburgii, min. 30.

Tonic Comp.: ℞ Iron Pyrophos. grs. 2. Quinine Bisulph, grs. 1. Strychniæ Mur, gr. 1-100.

Trinitrin, gr. 1-50 vel gr. 1-100.
Trinitrin, gr. 1-100 et Amyl. Nitrit. gr. ½.

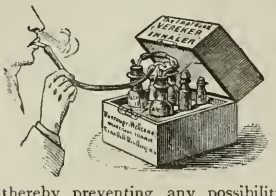
Trinitrin Comp.: ℞ Trinitrin, gr. 1-100. Amyl. Nitrit. gr. ½. Pulv. Capsici, gr. 1-50. Menthol, gr. 1-50.

Urethane, grs. 5.
Zinci Sulph., gr. 1.
Zinci Sulph., grs. 10.
„ Sulphocarb., grs. 2.
Zymin (Fairchild) grs. 2.

Zymin Comp.: ℞ Zymin, grs. 2. Bismuth Subnit., grs. 3. Pulv. Ipecac., gr. 1-12.

MODERN PHARMACY (continued)—

THE VEREKER CHLORIDE OF AMMONIUM INHALER.—This is the only instrument of its kind which will yield absolutely neutral fumes of Chloride of Ammonium, and does not require recharging at each time of using. Dr. Macnaughton Jones in his excellent work, "Diseases of the Ear and Naso-Pharynx" says, "This is the best Inhaler for the surgeon's study." The Vereker Chloride of Ammonium Inhaler consists of 3 bottles, one for the acid, another for the solution of Ammonium, and the remaining bottle for water to be used as a wash bottle. The patient during the process of inhalation draws the vapour through the liquid contained in the wash bottle, and thus thoroughly extracts all impurities, thereby preventing any possibility of irritation by nitrous fumes, or other extraneous vapour frequently yielded together with the Chloride of Ammonium. Inhalations of Ammonium Chloride are of the greatest benefit in the treatment of bronchial affections characterized by difficult expectoration of thick viscid phlegm. Ammonium Chloride stimulates a healthy condition of the mucous membrane and causes liquifaction of the sputum. This Inhaler is supplied complete in an elegant and substantial box suitable for travellers at 7/- each.



TEREBENE, PURE (B. W. & Co.)—This, as originally employed by Dr. Murrell in his experiments in the treatment of winter cough, possesses the odour of freshly-sawn pine-wood. It affords excellent results in chronic bronchitis, asthma, either taken internally, dropped on sugar, or when employed as an inhalation with steam or by means of the Pinol Eucalyptia dry Inhaler. Terebene, pure (B. W. Co.), is supplied in 1 ounce, 2 ounce, 8 ounce and 16 ounce bottles, at 9d. 1/-, 2/-, and 3/9 each.

URINARY TEST CASE.—Containing "Tabloids" for preparing Fehling's test solutions, urinometer, test tubes, graduated glass, 3 stoppered bottles for acid, spirit lamp, test papers, etc. This is a very handy bedside urinary test case, and contains all the appliances necessary for the rapid estimation of sugar.

VALOID FLUID EXTRACTS.—These are equivalent liquid or Fluid Extracts made of a definite standard strength where possible. The British Pharmacopœia standard is adopted with the decided advantage that the preparation when made according to directions therein given, is carefully assayed so as to contain a uniform amount of active principles that one ounce of the Fluid Extract is equivalent in active principles to one ounce of good quality drug. The Valoid Fluid Extracts of all the vegetable drugs employed in medical practice and ordinarily supplied in tinctures are prepared. A complete list of formulæ for the preparation of tinctures, infusions, decoctions, syrups, etc., with prices will be sent post free on application.

VAPOROLES.—These consist of a friable glass capsule containing the inhalant enclosed in a silken bag with an inner covering of absorbent cotton. In practice, the Vaporole is readily crushed, and may be either dropped into the jug containing half a pint of boiling water and then the vapour inhaled in conjunction with steam, or it may be placed in the water bottle of the Vereker inhaler, and then the vapour would be inhaled together with the Chloride of Ammonium. Vaporoles of Chloroform, Ether, Amyl-Nitrite, etc., may be used for inhalation by simply holding the crushed vaporole in the palm of the hand or in a handkerchief.

WALLICH'S INHALER.—This is an improved earthenware jug inhaler, fitted with hollowed handle through which the air is drawn to the base of the liquid. The medicament is poured on to a sponge contained in a glass cylinder fixed in the apex of the jug. When the patient inhales from the mouth-piece, air, which is drawn into the jug, bubbles up through the water, displacing a volume of steam, and this in turn passing through the sponge containing the medicament becomes impregnated with it. Inhalations by this method require little respiratory effort on the part of the patient, and the instrument is thereby indicated for the use of those patients where deeper and prolonged inspirations cause pain and considerable inconvenience. Wallich's Improved Inhaler is supplied complete at 4/- each.

BURROUGHS, WELLCOME, & Co.,

SNOW HILL BUILDINGS,

LONDON, E.C.

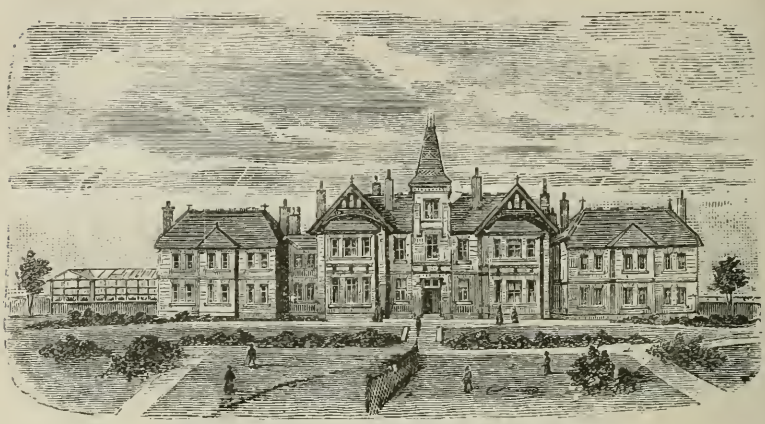
FISHERTON HOUSE ASYLUM,

SALISBURY.

FOR PRIVATE INSANE PATIENTS.

Terms, 16s. Weekly.

APPLY TO DR. FINCH.



SHAFTESBURY HOUSE,

FORMBY-BY-THE-SEA,

Near LIVERPOOL.

Private Asylum Licensed for the Treatment of Ladies and Gentlemen mentally afflicted.

VISITING PHYSICIAN—THOMAS R. GLYNN, M.D. Lond., F.R.C.P. Lond., Senior Physician Liverpool Royal Infirmary.

CHAPLAIN—Rev. J. B. RICHARDSON, M.A., Green Lea, Formby.

Plans approved by Commissioners in Lunacy.—This Asylum has been erected from plans approved by the Commissioners in Lunacy, and in every possible way in accordance with the modern ideas of the treatment of Mental Disease.

The Rooms throughout the building are large, airy, cheerful, light, very brightly furnished, and, as the walls are tinted in various colours, there is a complete absence of anything approaching to dulness or gloom.

Warming, Ventilation, and Drainage.—Each Sitting Room, Dormitory, and Corridor is warmed and ventilated by special means besides the ordinary fireplace, and the drainage is perfect.

Sea Air.—This Asylum, being situated about a mile from the sea, Patients have the benefit of sea air.

Private Rooms. — Private Rooms and special attendants provided whenever required.

Accommodation for Friends.—Friends of patients wishing to be near during treatment can be accommodated.

Grounds and Amusements.—There are about ten acres of ornamentally laid out Pleasure Grounds, which afford ample privacy and room for exercise, Lawn Tennis and other amusements.

Medical Opinion.—The Asylum has been visited by a large number of medical men in Liverpool and neighbourhood, all of whom have expressed themselves as highly pleased with the arrangements.

Train Service.—Formby Station is about ten minutes' walk distant. Trains run to and from Formby nearly every half hour to Southport, as also to the Exchange Station, Liverpool, and there is now direct communication with the North, and with London, and the South of England by means of the London and North-Western Railway.

Terms, &c.—Terms and all information can be obtained from

STANLEY A. GILL, B.A., M.R.C.P. Lond.
Resident Physician.

CHURCH STRETTON PRIVATE ASYLUM,

STRETTON HOUSE, CHURCH STRETTON, SHROPSHIRE.

ESTABLISHED 1853.

This institution is exclusively for the reception of Gentlemen of the Upper and Middle Classes. Its popularity and success must be attributed in a great measure to the open manner in which it is conducted: instead of being a place to be avoided, as asylums were in times past, it is the resort of the better class families for recreation and amusement, and we are of opinion that the proprietor has taken a step in the right direction, and one that will still further command the confidence of the public by providing accommodation for the friends of patients, who will thus have an opportunity of satisfying themselves as to the mode of treatment and the comforts afforded. The charges are moderate, according to the requirements of the patients.—FROM THE MEDICAL PRESS.

Church Stretton is situated in the Highlands of Shropshire (600 ft. above sea level), amidst the most charming mountain scenery, and has a very invigorating and bracing atmosphere. One great object of this institution is to find healthy and congenial occupation for its patients, and thus assist the special medical treatment. Every inducement is held out for patients to interest themselves, either on the large farm attached to the house, and which supplies direct both beef, mutton, and agricultural produce; or in the workshops, in gardening, &c. There are numerous tennis courts and a private cricket ground; carriage exercise is provided for those who desire it, and walks of several miles in length can be had in the grounds and on the hills without going on the public road. One result of these facilities is that just 50 per cent. of the patients are on parole (having almost complete liberty) or have fixed occupations to interest themselves in daily. Thus the almost unavoidable feeling of restraint is very largely decreased, and daily contact with the outside world removes any flavour of seclusion.

The house has recently been enlarged and renovated, handsome suites of rooms being provided for first-class cases. Medical men are cordially invited to visit this Asylum and judge of its advantages for themselves; if desired, an album containing photographs of the house and surrounding scenery will be forwarded.

The friends of patients and a few voluntary patients can now be received as boarders. Church Stretton is on the Shrewsbury and Hereford main line, 12 miles from Shrewsbury, and can be reached from London (Euston or Paddington) in 5 hours, Birmingham 1¾ hour, Bristol 4 hours, Liverpool and Manchester 2¾ hours, Edinburgh and Glasgow 8 hours, Derby and Nottingham 5 hours.

Apply to the Supt., C. W. CAMPBELL-HYSLOP, Stretton House, Church Stretton. Medical Supt., DR. HORATIO BARNETT, M.A., M.B. and B.C. (Cantab), M.R.C.S. and L.R.C.P. (Lond).

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(Near NORTHAMPTON.)

THIS Establishment, instituted some forty-three years since for the Treatment of the Mentally and Nervously Afflicted, of the Upper and Middle Classes, and one of the earliest to adopt the enlightened and humane Treatment, since accepted as the only true method of approaching these sad maladies with the hope, if not of cure, at least of alleviation, still continues its efforts in the same spirit under the general management and control of the late Dr. Prichard's brother, who, thoroughly conversant with the treatment hitherto so successfully adopted, is also assisted by the lady members of the family and efficient medical advice and care; the object of each being, while quietly exercising all necessary moral and physical supervision, to make the place as home-like as possible—many patients of both sexes, whose condition allows of it, daily associating, and living with the family—an end scarcely attainable under the necessarily inelastic routine of large public Establishments.

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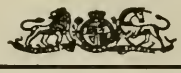
INCORPORATED BY  *ROYAL CHARTER.*

JAMES MURRAY'S ROYAL ASYLUM, PERTH.

CHAIRMAN - - - THE VISCOUNT STORMONT.

This Asylum, for PRIVATE PATIENTS only, is beautifully situated in the immediate vicinity of Perth, in the midst of extensive PLEASURE GROUNDS, which are surrounded by the fields of the HOME FARM.

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FOR THE CARE AND TREATMENT OF INSANE OF BOTH SEXES OF THE UPPER AND MIDDLE CLASSES.

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MACKEY, MACKEY & CO.,

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MISTURA BISMUTHI COMP. (Mackeys').

The most reliable preparation of Bismuth. Contains Bismuth in its most effective form, combined with Chloroform, Nux Vomica, Hydrocyanic Acid with or without Morphia. A valuable remedy for various forms of Indigestion and any Disorder of the Stomach, in Pyrosis and Internal Malignant Diseases. It is prescribed with success for Infantile Diarrhœa. Dose 15 to 30 minims. **Price 7s. 6d. per lb.**

The Lancet says:—"Bismuth could hardly be given in a better form."

"I have used the Mistura Bismuthi Co., prepared by Messrs. MACKEY, MACKEY & Co., and have found it most efficacious, and far superior to any other preparation of Bismuth that has come under my notice."—C. EATON BAKER, M.R.C.S., etc.

"MACKEY'S Mistura Bismuthi Co. is an improvement on other preparations of Bismuth, and is more acceptable to the stomach. I have found it a very valuable preparation." J. POSTGATE, F.R.C.S.

MISTURA CERII COMP. (Mackeys').

A new and soluble Compound of Ammonio Citrate of Cerium. *A specific for Vomiting in Pregnancy*, Sick Stomach, in alleviating the pain and vomiting in Carcinoma and general Chronic Vomiting, etc. Dose 15 to 60 minims. **In bottles, 2s. 9d., 5s. and 9s.**

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Prepared from Selected Barks of RHAMNUS PURSHIANA and RHAMNUS FRANGULA, flavoured with Aromatic Syrup. Dose—℥ i. to ℥ iv.

To obtain the best results from the Barks of Rhamnus Purshiana and Frangula it is necessary that they should be collected, not only at the right season of the year, but of the proper age, when the bark is neither too young nor too old. Much of that sent to this country consists of bark of all ages, and is consequently not always to be relied upon. In preparing our Mistura Cascaræ Comp. we use only that bark which has arrived at proper maturity, thus ensuring the best results; the menstruum employed being the most suitable for extracting the aperient properties of the bark without causing precipitation when diluted. It is agreeably flavoured with Aromatic Syrup, and forms an excellent remedy for Habitual Constipation when continued in doses of ℥ i.; or as an aperient or cathartic, in doses of ℥ ii. to ℥ iv. **Price 3s. 4d. per lb.**

"The value of Cascara Sagrada is now very generally recognised. Mackey, Mackey & Co.'s Mistura Cascaræ Sagradæ is evidently prepared from the finest of selected material, and we confidently commend this excellent preparation to the notice of the profession."—*Lancet*, August 29th, 1891.

LIQUOR OPIATUS (ANODYNE TINCTURE).

This preparation is invariable in its strength, and enjoys a reputation superior to other preparations of Opium as an anodyne. This anodyne is strongly recommended.

Price 8s. per lb.

GLYCEROL PEPSINÆ CUM EUONYMIN (Mackeys').

The beneficial action of Euonymin as a cholagogue combined with the digestive properties of Pepsine renders this preparation of great value in cases of Indigestion, Deficient Secretion of Bile and Gastric Juice; very efficacious wherever the digestive functions of the stomach are inefficiently discharged. **Price 7s per lb.** Our clients remark when re-ordering—

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"It is a preparation we use in *considerable quantity* and *find it very useful*."—M.R.C.S., &c.

GLYCEROL PODOPHYLLI (CATHARTIC) (Mackeys').

Powerful Stimulant of the Liver and Intestines. Miscible with Acid and Alkaline Solutions, Infusions, Tinctures, etc. **Price 5s. per lb.**

Makers of Soluble Gelatine-, Pearl-, and Sugar-coated Pills, Tabellæ, Hypodermic Injections, Pessaries, Suppositories, Bougies, Pastils, Fluid Extracts, Oleates of the Metals, &c.

Drugs and Chemicals of Best Quality. New Remedies & Special Pharmaceutical Preparations. Price Lists and Samples on Application.

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MANUFACTURERS OF

Prize Medal Soluble Pearl-Coated Pills.
All Preparations of the British Pharmacopœia,
Extracts,
Liquors,
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Compressed Tablets of Pure Drugs,
Hypodermic Tablets and Ophthalmic Discs,
Medicated Lozenges and Pastils,
Medicated Pessaries, Suppositories & Bougies,
Nutritive Suppositories,
Glycerine do.
Concentrated Mixtures, Liquors and Infusions,
Fluid Extracts of the U.S.P.
Powders for Dispensing,
Plasters, Oleates, Antiseptic Dressings,
Surgeons' Instruments & Medical Appliances,
Dispensing Cabinets, Medicine Chests,
AND EVERY REQUISITE FOR THE SURGERY.

Price Lists, containing upwards of 850 Pill Formulæ and full particulars of above-mentioned articles, post free.

Lorimer's Coca Wine.

Prepared from COCA LEAVES (Erythroxylon Coca).

In Bottles, 36/- per dozen.

Lorimer's Hypophosphites.

"SYRUP. HYPOPHOSPH. CO. (LORIMER)."

Among the principal merits of this preparation may be enumerated:—

1st.—**It is not a quack preparation or secret nostrum; the formula is printed on every label, and the price is moderate.**

2nd.—**The formula is original, founded upon scientific principles, and has stood the test of practical experience.** There is no other preparation of the hypophosphites which contains so large a proportion (about six grains to the fluid drachm) of the salts employed.

3rd.—**All its constituents are in perfect and permanent solution, the last dose being identical, under all circumstances, with the first.** There is consequently no possibility of danger from the precipitation of strychnine, as is the case with preparations that require shaking to distribute the dose.

4th.—The formula being stated on every label, the physician is enabled to *vary the dose* according to the requirements or idiosyncrasies of the individual case.

5th.—**It is pleasant to take,** and can readily be prescribed for children.

6th.—**It is neutral, or very slightly alkaline,** and can therefore be taken without ill effect by persons afflicted with sensitive stomachs, which would probably reject acid or strongly alkaline preparations.

Protected by Her Majesty's Royal Letters Patent.

Iodised Oil (*Oleum Iodi*).

FOR OUTWARD APPLICATION ONLY.

ADVANTAGES.—Is readily absorbed. Does not stain the skin. May be applied to the most delicate skin without irritation.

In 16-oz. Bottles, 6/- each.

Price List of Lorimer's Specialities sent on application.

LORIMER & CO., Britannia Row, LONDON, N.,

WHOLESALE DRUGGISTS AND MANUFACTURING CHEMISTS

Hartmann's
PATENT
WOOD WOOL PREPARATIONS.

HARTMANN'S Patent Wood Wool Wadding,
ANTISEPTIC,
1/9 per lb.

Absolutely the most absorbent dressing made. Thoroughly antiseptic, gives perfect drainage, and does not heat. Absorbs discharges of every description.

Over 125,000 lbs. sold annually.

Adopted in 200 leading Hospitals.

Wood Wool TISSUE,
ANTISEPTIC,
2/- per lb.

In a continuous roll, consisting of a layer of HARTMANN'S PATENT WOOD WOOL WADDING between two pieces of Sublimate gauze, possessing all the merits detailed above, with the advantage that any size pad can be cut off with the scissors.

Sanitary Wood Wool SHEETS,
For Accouchement, &c., in three Sizes.

1/- Size .. 18 × 20 inches.
1/6 ,, .. 26 × 20 ,,
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These Sheets are made of HARTMANN'S PATENT WOOD WOOL WADDING, the most absorbent substance ever known; they are most comfortable and healthy, are perfectly antiseptic, have not the disagreeable smell so common to india-rubber sheets, and are much cheaper. In Accouchement a large sheet is laid under the patient, it absorbs the discharge completely and is simply burnt after use; no soiled clothes, risk of puerperal fever greatly lessened, and perfect comfort and cleanliness.

These Sheets are also used for Bed Sores, Operations, &c.

HARTMANN'S Wood Wool DIAPERS,
ANTISEPTIC,
1/-, 1/4 & 2/- per doz.

FOR MENSTRUATION AND ACCOUCHEMENT,
They are Most Comfortable and Healthful,
They are Soft and Antiseptic,
They Cost no more than the Washing of Ordinary Diapers,
Risk of Infection is Avoided,
They are Invaluable at Home, and of Great Service to Ladies when Travelling,
After Use they are Simply Burnt.

HARTMANN'S DIAPERS are made of the PURE PINE, are perfectly antiseptic and soft, they therefore possess many advantages over the various makes of cotton wool pads.

Wood Wool GONORRHŒA BAGS,
ANTISEPTIC,
Per box of one doz., 1/8.

The most comfortable, clean and healthful appliance ever made for this complaint. No patient should be without them. They absorb all discharge, avoid soiling clothes, and the cheap price brings them within the reach of everyone.

Highly Recommended by the Leading Surgeons for this Special Complaint.

Wood Wool VACCINATION PADS,
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Highly Recommended by the principal Public Vaccinators.

The following ADVANTAGES are claimed for this Protector:

1.—It protects the arm from external violence. 2.—It absorbs all discharges. 3.—Most important of all, it reduces the risk of septic absorption and blood poisoning. 4.—It cannot be used a second time, like ordinary "shields," which it is too often the dangerous practice to use again and again. 5.—Lastly, and not its least advantage, is its extreme cheapness.

SPECIAL QUOTATIONS FOR HOSPITALS.
REDUCED PRICES TO THE MEDICAL PROFESSION.

THE SANITARY WOOD WOOL CO., Limited,
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Pepto-Mangan "Gude."

LIQUOR MANGANO-FERRI PEPTONATUS "GUDE."

Contains 0·1 p.c. Manganese and 0·6 p.c. Iron as Peptonates.

NON-ASTRINGENT, PALATABLE, EASILY DIGESTED.

The administration of **Manganese** in the form of a Peptonate (Dr. GUDE's special process) and in combination with Iron, as in

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has proved most successful in cases where all other Iron preparations have failed, and where a rapid increase of Hæmoglobin is intended.

Pepto-Mangan "Gude" is a Specific against

Chlorosis, Anæmia, &c.

May be had through all Chemists, in 8-oz. Bottles, 2/9; and 1-lb and 2-lb Bottles for Dispensing, 3/- per lb.

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(Dr. FINKLER & CO.)

A vegetable ferment prepared from the juice of the Carica Papaya. It is obtained by a **special process**, and is not merely the dried juice. Its value in the treatment and final cure of Dyspepsia depends upon the following points:—

1.—It is superior to either Pepsine or Pancreatine, as it combines the properties of both, and requires a smaller dose. It acts in Acid, Alkaline, and Neutral Solutions.
2.—Its action is continuous throughout the digestive tract.
3.—It acts as a Tonic and Antiseptic, and creates appetite.
4.—It acts perfectly well in the concentrated condition in which food is found in the stomach, also when the H.C. is deficient in the gastric secretion, not requiring, like Pepsine, the addition of more liquid and acid.
5.—Its purely vegetable origin renders it a far more agreeable remedy than the **animal ferments** now in use.

Numerous reports of the leading English and Foreign Physicians, Hospitals, and Institutions testify to its **absolute Therapeutic Efficacy, Purity, and Uniformity.** (*Vide* Pamphlets and Opinions of the Medical Press.)

PAPAÏN (Dr. FINKLER & Co.) is supplied in Powder, Medicated Lozenge, Pills, Tablets, Liq. et Acid Glycerine, Iridine, Bismuth, Casc. Sagrada, and is obtainable through all Wholesale Druggists, and of

B. KÜHN, St. Mary-at-Hill, LONDON, E.C.

Samples and Literature free to the Medical Profession.

BLAKE, SANDFORD & BLAKE

Invite special attention to their

Guaiacate of Lithium For the Treatment of GOUT and RHEUMATISM. The value of this **soluble** combination of **Guaiacum** with **Lithium** has been conclusively proved. It is best administered in Doses of 5 grains (in Pill) 2 or 3 times daily.

Lithia, Potash, and Soda Waters,

All of full Pharmacopœial **Strength** and **Purity.** Also

Mineral Acid Water, A delicious and wholesome sparkling beverage, especially grateful to **Convalescents.**

It is prescribed with marked benefit in **Phthisis,** and in the Treatment of Sluggish Liver and Indigestion.

Prepared only by the Original Makers—

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Aplanatic Lenses, by Suter.
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As furnished to St. Mary's and other Hospitals.

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Original Manufacturers of the LIQ. SENNÆ COMP. (VEL DULCIS), AMMONIATED ESSENCE OF SECALE, and of the TINCT. RHŒADOS C ROSA.

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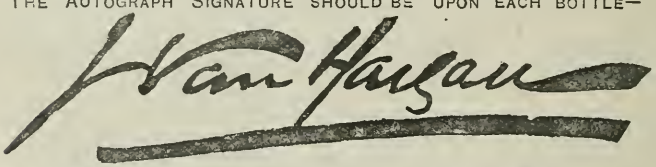
A New and Revised List of Prices (with Testimonials) can be had on application.

VAN HARGAN'S

KOLA WINE

Is the Best Restorative Tonic during Convalescence.
For Exhaustion, Fatigue, Sleeplessness.
It Assists Digestion. It Improves the Appetite.
Useful as a Tonic during and after Influenza.

THE AUTOGRAPH SIGNATURE SHOULD BE UPON EACH BOTTLE—



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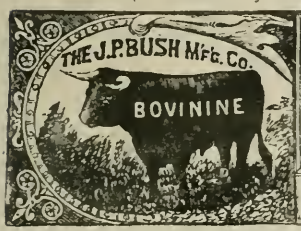
THE ORIGINAL RAW FOOD EXTRACT.

(Prescribed by the Medical Profession since 1878.)



BOVININE

A RAW FOOD EXTRACT.

THE VITAL PRINCIPLES OF BEEF CONCENTRATED.
CONTAINING 20 PER CENT. OF COAGULABLE ALBUMEN.

PALATABLE. NUTRITIOUS. PERMANENT.

BOVININE is a preparation of the juices of lean uncooked beef, prepared by a cold process. In it are preserved *all* the nutritive elements, as well as the salts and extractives, as such, having undergone no disintegration or decomposition. It is the most concentrated and nutritious food yet presented.

BOVININE has rapidly gained the confidence of the Medical Profession throughout the United Kingdom as a FOOD in the truest sense, and one that can be relied upon in the most critical conditions.

It is largely prescribed in treatment where a TRUE NUTRIENT is indicated, and only needs a careful trial to convince any member of the Medical Profession of its great value in all conditions of **mal-nutrition** or **mal-assimilation, convalescence, irritation or ulceration of the intestinal tract,** in **chronic or exhausting diseases,** in **supporting treatment,** in the **puerperal state,** in **severe sea-sickness,** in **alcoholism,** the **opium habit,** and as an adjuvant in the **treatment of obesity.**

SAMPLES free to the Medical Profession, on application to the Company.

THE J. P. BUSH MANUFACTURING COMPANY,
32, SNOW HILL, LONDON, E.C.

SOLD BY CHEMISTS. IN BOTTLES, 12oz., 4s. 6d.; 6oz., 2s. 9d.

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BONTHRON'S
DIABETIC BISCUITS & BREAD.

Dr. PAVY, in his recent work on "Diabetes," p. 245, says:—

"Mr. BONTHRON of 106, Regent Street, has recently succeeded in producing some Gluten Biscuits and Bread which are more eatable than anything of the kind I have ever yet met with. The Biscuits present somewhat the character of a cracknel; they eat short and crisp, and are really reducible in the mouth; having no unpleasant taste; and, consumed with other food, possess the power of cleansing the palate. The Bread is moist, and will not keep good for more than about ten days. Its consumption therefore involves a frequent supply. It serves to increase the variety at the command of the Diabetic; and, independently of this, possesses the advantage of presenting an approach to the condition of ordinary bread."

"The LANCET" of June 9th, 1877, under the head of Analytical Records, says:—

"We have received from the above well-known maker no less than six different samples of biscuits, etc., intended for diabetic treatment. No. 1 is called the 'Diabetic Biscuit,' and contains much gluten and very little starch. No. 2 is the 'Regent Biscuit' made from gluten and prepared bran. No. 3 is an 'Almond Biscuit,' and the rest are modifications of the first two. They are excellent preparations; and though, of course, they are not so palatable as if they contained the normal quantity of starch, they can be eaten without difficulty or repulsion. Indeed, it is not easy to see how they could be improved."

The Bread is made fresh every day, and, as has been already noticed, will keep good for a week; a supply can thus be forwarded to any part of the Kingdom. The Biscuits will keep good for almost any length of time, and on this account are well adapted for exportation.

In addition to the above, a large and excellent variety of Dessert Biscuits of a nutritive and appetising character can now be supplied.

The new COFFEE AND CRESSINI BISCUITS, now widely recommended by Medical Men, are very agreeable and pleasant.

These preparations have just lately been awarded the Silver Medal, highest award in class, in the Edinburgh Exhibition.

GLUTEN FLOUR, 2/6 per lb. BISCUITS, 3/6 per lb.
LOAVES, 9d. each. BRAN, 1s. per lb.

The LOAVES can be sent through the Post, 1s. each.

It is with much satisfaction that J. BONTHRON is able to state that he is now regularly supplying Customers who have used these Preparations for upwards of ten years, and from whom he receives testimony of the great advantage they continue to derive from them.

As Gluten Preparations are costly, and will keep good any length of time, it is cheapest and best to communicate direct with the Maker,

JOHN BONTHRON, 106, Regent Street, London.

GOLD MEDALS.—Antwerp, Cologne, & Amsterdam.

'JOHANNIS.'

"KING OF TABLE WATERS."

CHARGED ENTIRELY WITH NATURAL GAS.

Prevents Gout, Rheumatism and Indigestion.

MIXES EQUALLY WELL WITH WINE, SPIRITS OR MILK.

Price List.

Delivered free to any part of the United Kingdom at the following prices:

	Cases of 2 dozen.	Original Cases of 50.	Original Cases of 100.
Pints ...	11/- ...	20/6 ...	38/-
Quarts ...	13/- ..	24/- ...	—

Cases and Packing included.

ALLOWANCES on RETURNED EMPTY BOTTLES as follows:

	Per Dozen.	Per Case of 50.
Pints	5d. ...	2/-
Quarts	7d. ...	2 9

TERMS—CASH WITH ORDER.

"JOHANNIS" is prescribed by the most eminent medical men of the day as a water which, although *not medicinal* in the common acceptation of the term, will keep the functions of the body in healthy action, invigorate the system, and, by promoting the alkalinity of the blood, *prevent the deposition of Uric Acid, and the consequent inroads of Gout, Rheumatism and Indigestion.*

The finest tribute ever accorded to sterling merit is contained in the *Lancet* of August 8th, 1891, pages 307–8, which embodies the "*Report of the Lancet Special Commission on Natural Mineral Waters.*" "JOHANNIS"—*the subject of the Report—being selected from amongst the Natural Mineral Waters of the World as alone worthy of this unprecedented distinction.*

This Report, which contains a number of delicate and interesting analyses, a full description of the Spring, method of bottling, etc., at Zollhaus, Germany, together with numerous press notices, public and private testimonials, etc., will be sent to any part of the world, post free, on receipt of address.

Telegraphic Address—"UNCHANGING LONDON."

Postal Address—JOHANNIS SPRINGS, Limited,

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Bankers—NATIONAL PROVINCIAL BANK OF ENGLAND.

BOVRIL.

The Guaranteed product of PRIME OX BEEF, and Fifty times more nourishing than ordinary Extract of Meat or Home-made Beef Tea.

Copy of Analysis of Bovril.

	Bovril in Pot.		Bovril in Bottle.
Moisture - - - -	33.48		41.40
Mineral or Bone Food - -	15.41		14.08
Fibrin and Meat Extract, or Meat Food - - - -	36.21	Nitrogenous or flesh-forming food	33.88
Albumen or Egg Food - -	6.33		4.60
Carbonaceous or Heat-giving Food	8.57		6.04

The Microscopical examination shows these samples to contain from 10 to 14 per cent. of good sound beef, ground to a very fine powder, a feature which distinguishes Bovril from all Extracts of Beef.

The Organic Matter, which on the dry amounts to 76 per cent., consists of Nitrogenous and Non-Nitrogenous bodies, including Albumen, Fibrin, Creatin, Creatinine, Peptones, &c.

I consider Bovril to be a most valuable preparation, containing as it does a concentrated extract of beef, with the solid beef itself, the latter partially peptonised, and therefore in a form more easily digested.

From a Medical point of view it is far superior to home-made beef-tea, which, although generally supposed to contain much nourishment, shows on analysis a low percentage of Nitrogenous or flesh-forming compounds.

For invalids and persons in delicate health it is all that could be desired, being a perfect food, readily digested and assimilated.

(Signed) WM. HARKNESS,
F.I.C., F.C.S., F.R.M.S., ETC.,
GOVERNMENT ANALYST, SOMERSET HOUSE.

New Combinations:—

BOVRIL CHOCOLATE,
BOVRIL COCOA,
BOVRIL BISCUITS, &c.

THE NATURAL MINERAL SPRINGS OF

TARASP,

ENGADINE, SWITZERLAND,

Are a most efficacious remedy for CHRONIC STOMACH AFFECTIONS, HABITUAL CONSTIPATION, JAUNDICE, GALLSTONES, HÆMORRHOIDAL CONDITIONS, GOUT and OBESITY. They surpass the principal alkaline-saline Springs (CARLSBAD, KISSINGEN, MARIENBAD and VICHY) with respect to their amount of fixed constituents and carbonic acid gas.

"*TARASP WATER IS PLEASANT TO TASTE.*"—LANCET.

A VALUABLE AND RELIABLE APERIENT.

TARASP SALTS for Obstinate Constipation.
TARASP LOZENGES for Hoarseness and Irritating Cough.
TARASP EFFERVESCING POWDER for Liver Complaints.

Circulars and all Particulars from our Sole Agent:

RICHARD DAVIS,

Importer of Natural Mineral Waters,

AND MANUFACTURER FOR HOME AND EXPORT OF

PURE AERATED WATERS.

SODA WATER.—According to Brit. Pharm.; agreeable to palate and corrects acidity.
SELTZER WATER (super-carbonated).—A pleasant beverage, and promotes digestion. *Best Table Water.*
POTASS WATER DOUBLE.—Efficacious against Gout, Rheumatism, and Calculus.
LITHIA WATER.—Counteracts formation of Lithic Acid and Gravel.
TONIC WATER.—Agreeable, refreshing, and stimulating.

REPORT IN THE LANCET.

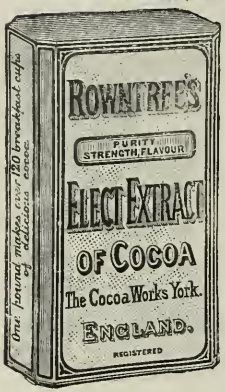
"All the Samples submitted to us indicated careful preparation and the employment of good materials. There was a remarkable absence of organic matter, and no trace of injurious metals, as lead, tin, or copper."

20, MADDOX ST., REGENT ST., LONDON, W.

ROWNTREE'S
"ELECT" COCOA

(REGISTERED).

PURITY—STRENGTH—FLAVOUR.



The "ELECT" COCOA is characterised by **extraordinary strength** and by a **refreshing** and **delightful taste** and **aroma.**

It forms a highly-nutritious and easily digestible article of diet.

It can be made in an instant.

It is extremely soluble.

It is **ECONOMICAL,** as one pound will make 120 cups of Cocoa.

Put up in 1*lb.*, ½*lb.*, ¼*lb. and* 6*d. Tins.*

The "*Lancet*" says—**Strong** and **Pure**.....**Free from Acrid Taste.**

"*British Medical Journal*"—**One of the best. Flavour** and **Aroma** are good.

"*Medical Press*"—Certainly of a **delicate flavour**.....perfectly soluble.

"*Medical Re-order*"— One of the **best ever brought under our notice.**

"*Hospital*"—Of the **first quality,** undoubtedly **strong** and of a **fine flavour.**

"*Health*"—A very **admirable Cocoa Extract**.....a **pure** article.....a **valuable food.**

"*Hospital Gazette*"—Agreeable **flavour** and **aroma**.....everyone should *elect* to use it.

"*Illustrated Medical News*"—**Economical, free from bitterness,** and of **delicious flavour.**

"*Medical Annual*"—Possesses an **unusual degree of solubility,** a **full aroma,** and is **free from acridity.**

A. H. Hassall, M.D., and Edwin Godwin Clayton, F.C.S.—.....**unusually soluble**.....of **exceptional strength** and especially **delicate** and **agreeable flavour**..... a preparation of **excellent quality.**

H. I. ROWNTREE & CO.,
THE COCOA WORKS, YORK, ENGLAND.

SAMPLES TO THE PROFESSION FREE.

DESICCATED SOUP, TOMATO.

Registered Trade Mark, "Desiccated Soup."

This preparation is largely composed of TOMATO, combined with choice garden vegetables, forming in a concentrated and portable form a perfect article of diet—delicious, healthful, and economical.

1-lb. lever top canisters, 2/6; ½-lb., 1/3; ¼-lb., 8d.; and in metal boxes handsomely labelled and wrapped, containing 1 doz. packets, 2/-

"EDWARDS' ECONOMIC COOKERY," a collection of 100 RECIPES for the use of our Soups, sent GRATIS and POST FREE on application.

FREDK. KING & CO., LIMITED,

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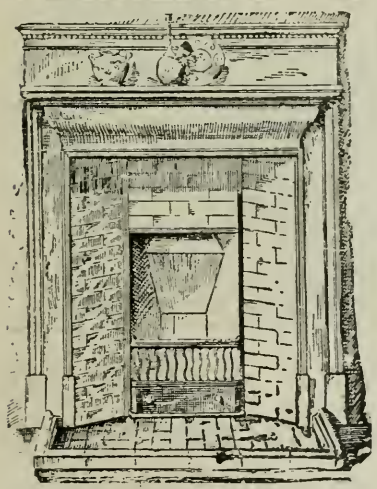

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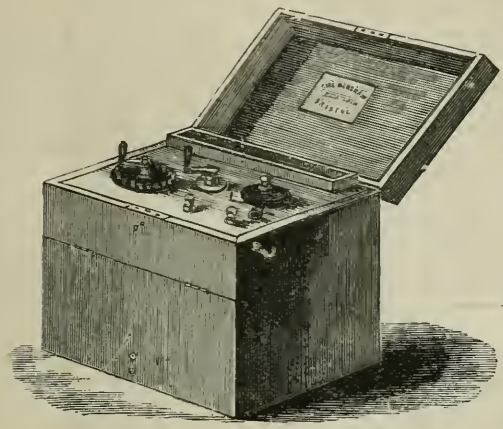

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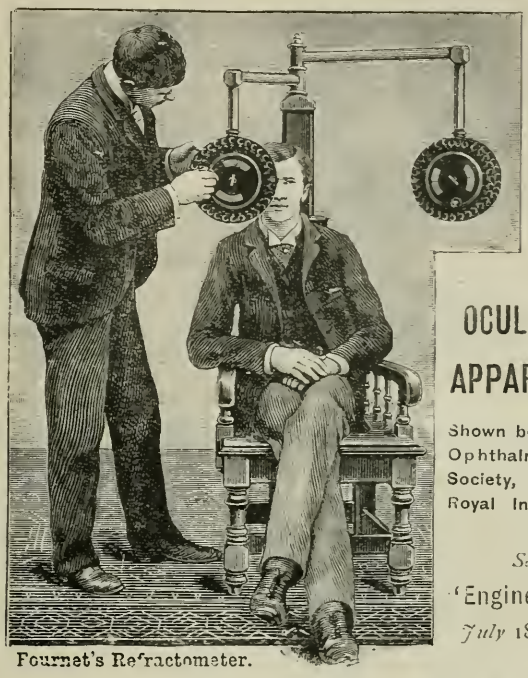

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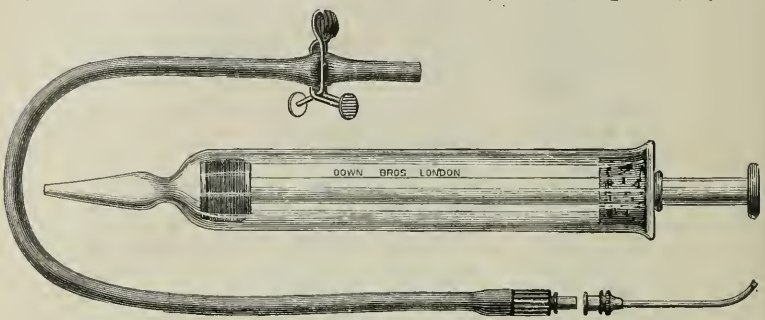

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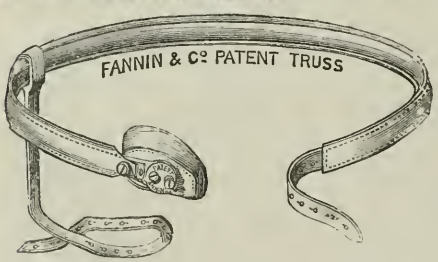

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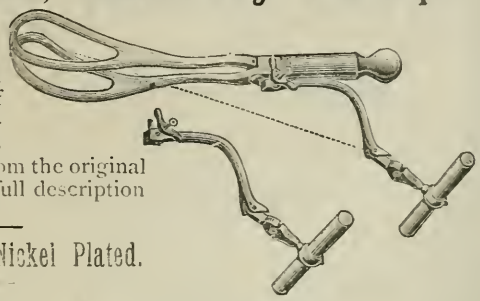

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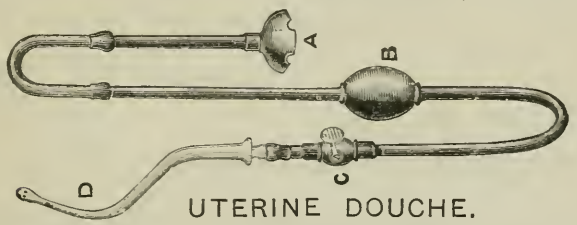

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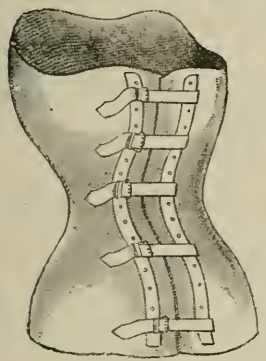

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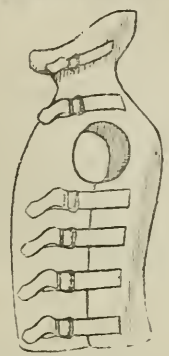

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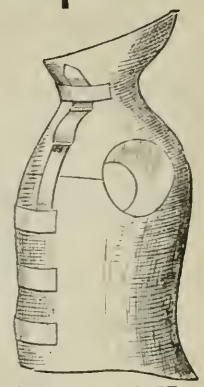

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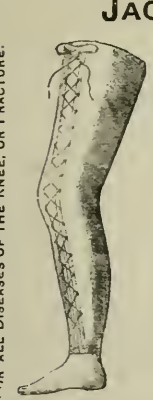

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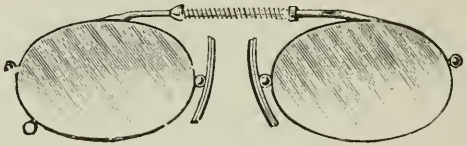

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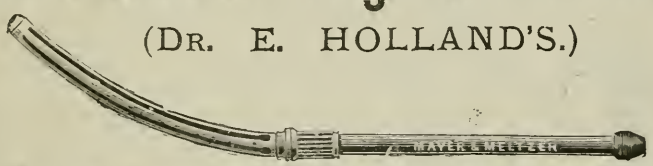

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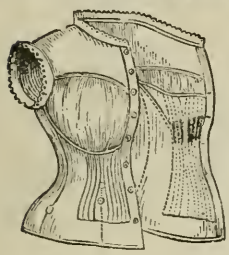

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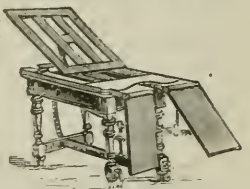

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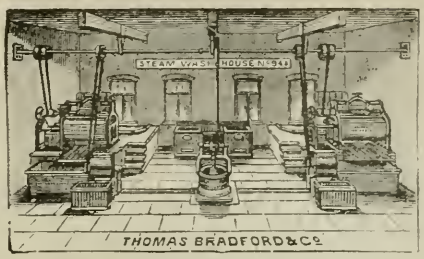

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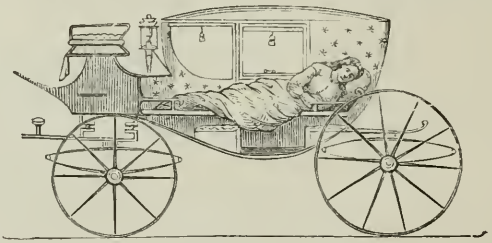

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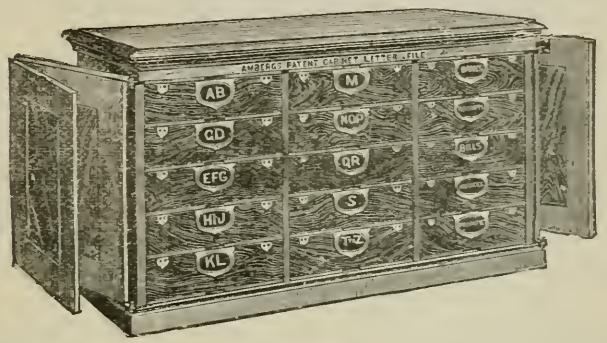

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